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ABSTRACT

This document is a compilation of completed research in the areas of health, physical education, recreation and allied areas for the year 1959, and for a part of the year 1958. The compilation is arranged in three parts. Part I consists of an index showing cross references for all listings in parts II and III. Part II contains a bibliography of research covering articles published in fifty-three periodicals and Part III contains listings and abstracts of unpublished masters and doctoral theses for 35 graduate programs in health, physical education, recreation and allied areas. There is a total of 370 listings in the bibliography and 415 references to the masters and doctoral theses. Abstracts are provided for a majority of the abstracts. (HB)

Volume 2

1960

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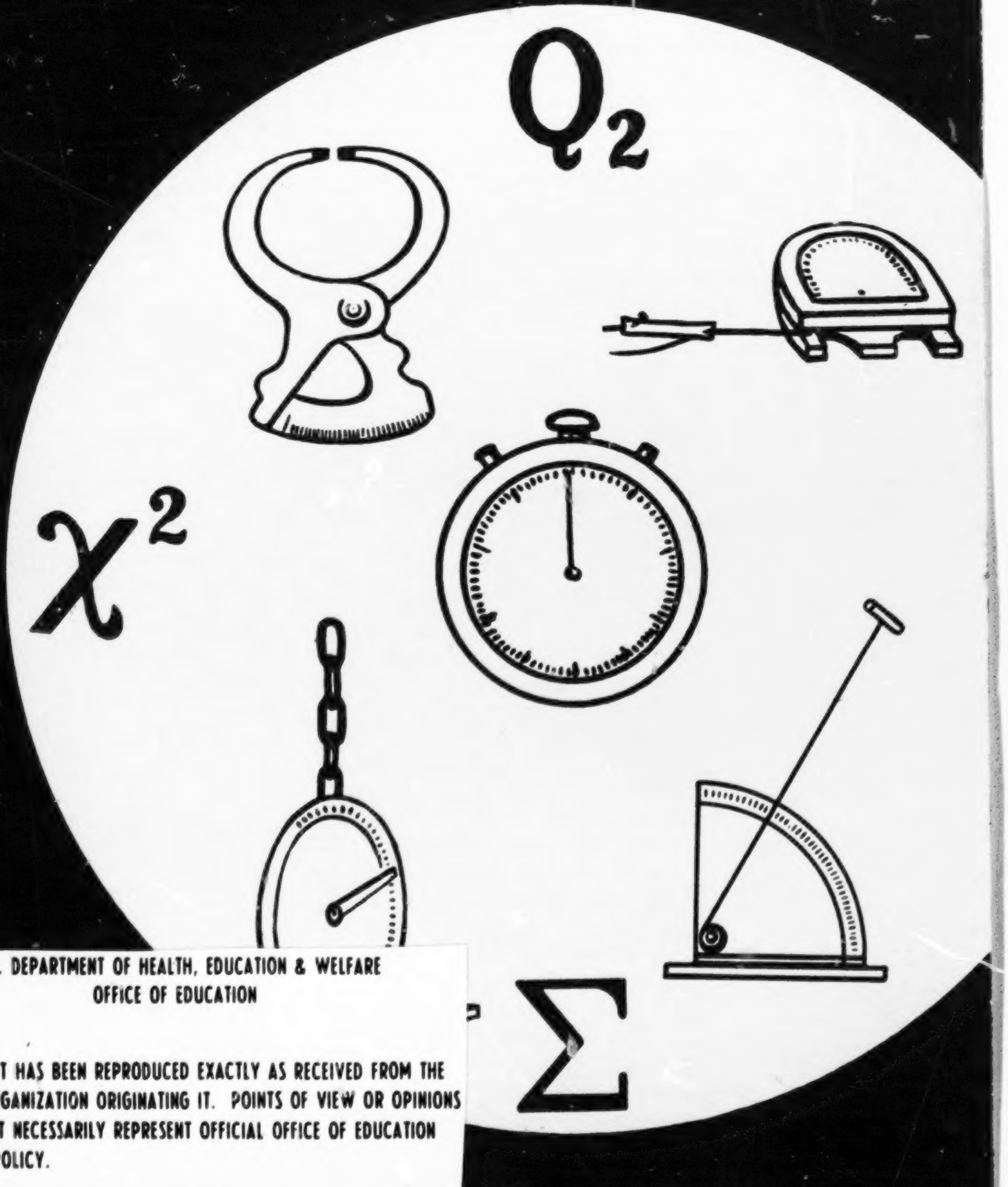

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OMPLETED RESEARCH

in health, physical education, and recreation

Periodicals Covered

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American Journal of Human Genetics
American Journal of Hygiene
American Journal of Physical Anthropology
American Journal of Physiology
American Journal of Psychiatry
American Journal of Psychology
American Journal of Public Health
Archives of Physical Medicine and Rehabilitation
Athletic Journal
California Journal of Educational Research
Child Development
Child Development Abstracts and Bibliography
Circulation
Circulation Research
Clinical Science
Geriatrics
Growth
Human Biology
International Zeitschrift fur Angewandte Physiologie
Journal of Abnormal Psychology
Journal of the American Medical Association
Journal of Applied Physiology
Journal of the Association for Physical and Mental Rehabilitation
Journal of Clinical Investigation
Journal of Clinical Psychology
Journal of Comparative and Physiological Psychology
Journal of Educational Psychology
Journal of Educational Research
Journal of Experimental Psychology
Journal of Genetic Psychology
Journal of Personality
Journal of Physiology
Journal of School Health
Journal of Social Psychology
Mental Hygiene
Nation's Schools
Perceptual and Motor Skills
Photogrammetric Engineering
Physical Educator
Physical Therapy Review
Proceedings of the Society for Experimental Biology and Medicine
Public Health Reports
Quarterly Journal of Experimental Psychology
Quarterly Review of Biology
Recreation
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COMPLETED RESEARCH

in health physical education recreation

VOL. 2—1960 EDITION

covering research completed in 1959

Compiled by
ALFRED W. HUBBARD
and
RAYMOND A. WEISS

for the
RESEARCH COUNCIL
of the
AMERICAN ASSOCIATION FOR HEALTH,
PHYSICAL EDUCATION, AND RECREATION

A Department of the National Education Association

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Volume 2 **1960 edition**

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INTRODUCTION

This compilation lists completed research in the areas of health, physical education, and allied areas for 1959. It also lists some research completed in 1958 which was not submitted for Volume 1.

The compilation is arranged in three parts—index; bibliography of research published in periodicals; and abstracts and listings of unpublished Masters' and Doctors' theses.

Part I—Index

In the Index, cross references are given for all the listings in Parts II and III. The reader will locate references under the subject headings which are arranged alphabetically in this Index. Instructions for using the Index are given on page 1.

Part II—Published Research

Part II contains a Bibliography of research covering articles published in 53 periodicals. References are listed alphabetically by author.

Part III—Unpublished Masters' and Doctors' Theses

Part III lists completed Masters' and Doctors' theses for 35 graduate programs of health, physical education, recreation, and allied areas. Most of the references are accompanied by abstracts of the research. All references are numbered in alphabetical order under the sponsoring institutions, which are in turn listed in alphabetical order.

It is hoped that research workers will find this second compilation of completed research a convenient reference source.

COMMITTEE FOR COMPLETED RESEARCH
IN HEALTH, PHYSICAL EDUCATION, AND RECREATION

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Part I INDEX

The Index enables the reader to refer to the items of completed research listed in Parts II and III. Research topics are arranged in alphabetical order. The reference numbers following each topic correspond to the listings of completed research dealing with that topic. The B in bold face type indicates a reference to be found in the Bibliography (Part II); the T in bold face type indicates a reference to be found in the Theses Abstracts (Part III). The numbers indicate the order in which items are arranged in each Part.

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Part III THESES ABSTRACTS

Brigham Young University, Provo, Utah (B. L. Bangerter)

1. BROOKS, BEN H. *A History of Brigham Young University Track and Field in State, Division, and Conference Contests.* M.S. in Physical Education. 1959. 104 p.

2. COOK, JACK R. *The Effect of Increased Quadriceps Femoris Muscle Strength on the Performance of a Vertical Jump.* M.S. in Physical Education. 1959. 43 p.

3. MIERA, ALBERTO. *A Study of Some Aspects of the School Health Program, Taos County, New Mexico School District.* M.A. in Physical Education. 1959. 84 p.

University of Buffalo, Buffalo 14, New York (C. H. Myers)

4. BRITTON, PEARL E. *A Study of the Supply of and Demand for Certified Women Teachers of Health and/or Physical Education in the State of New York.* Ed.D. in Physical Education. 1959. 90 p. (C. R. Fall)

An attempt has been made to discover some factors involved in supply of and demand for trained women teachers of health and/or physical education. Statistics were secured as a result of 91 percent response to questionnaires sent to recent women graduates from major courses in colleges of New York State and from 97.6 percent response to questionnaires sent to public school administrators in the state. Results indicated a shortage of trained women teachers in the field that will continue to become more severe. Recommendations were made for increasing the numbers of women being trained, retaining more women in education, and encouraging larger numbers of women who have left teaching to return.

University of California, Berkeley 4, California (A. Espenschade)

5. WHITE, DORIS LOUISE. *A Study of Opportunity in Physical Education Classes for the Development of Values.* M.A. in Physical Education. 1958. 142 p. (P. Hodgson)

The values were selected from statements of the Educational Policies Commission (NEA). They were studied in 12 areas, judged by a panel to have potential for the development of "moral and spiritual values." Three physical education classes were studied for two weeks by collecting statements from teachers of their plans and evaluations in value development, student descriptions of significant experiences, and written records by an observer. The results indicated that opportunities for the development of moral and spiritual values can be planned, recognized, and utilized by teachers in physical education, and that students are aware of the values sought.

University of California, Los Angeles 24, California (C. H. Young)

6. ADAMS, ADRAN DETAR. *Effects of Physical Conditioning Upon Physiological Stress Response and Psychological Adjustment.* M.S. in Physical Education. 1959. (L. E. Morehouse)

Twenty-eight male volunteers from physical education classes were tested on the Brouha Five-Minute Step Test, the Cold Pressor Test, and Minnesota Multiphasic Personality Inventory, and were divided into a control and experimental group. The experimental group practiced an endurance running program for seven weeks, and both groups were retested. The control groups did not change significantly on any test. The experimental group adjusted more readily to the physical stress of the step test as evidenced by their lower pulse rate and quicker return to the basal level during three minutes recovery. This was significant at the 5 percent level. The experimental group had a higher systolic blood pressure increase after 60 seconds immersion on the Cold Pressor test and a quicker return to the resting level. The experimental group appeared more secure, self-confident, poised, and better adapted after the endurance running program.

7. **Anderson, Walter Loren.** *An Investigation of Selected Psychological Factors Involved In Coaching the High School Athlete.* M.S. in Physical Education. 1959. (W. M. Massey)

8. **Beacom, James Ernest.** *Parent Opinions of a YMCA Intramural Program for Boys.* M.S. in Physical Education. 1959. (M. E. Latchaw)

9. **Bell, Wesley Clark.** *The Relative Effectiveness of the Scissor Kick and the Bunch Jump in the Running Broad Jump.* M.S. in Physical Education. 1959. (M. E. Latchaw)

10. **Boerner, George Albert.** *Comparison of Two Types of Basketball Shoe Soles in Performance.* M.S. in Physical Education. 1959. (W. M. Massey)

Although all subjects considered the ripple sole basketball shoe more comfortable than a standard shoe, no significant differences were found in the Knox Test of Basketball Ability, speed running, Sargent Jump, landing shock, and energy cost of running, partly because the sample was too small.

11. **Britten, Samuel Dexter.** *Effect of Position on Strengthening the Knee Extensors.* M.S. in Physical Education. 1959. (V. Hunt)

The objective was to determine the contribution of the rectus femoris to strength gains of the knee extensors. Thirty-three male university students were placed in three equated groups on the basis of knee extensor strength. The first group exercised supine with the knee over the end of the bench at a 90-degree angle. This enabled the rectus femoris to participate in progressive resistance exercises conducted three times a week for six weeks. The second group exercised while sitting, and the third group did no progressive resistance exercise. After the first two groups exchanged exercise positions for one work period of heavy resistance exercise, a high proportion of the subjects that previously exercised is the sitting position reported muscle soreness. Otherwise, a possible error in measurement made the intended comparison impossible, but the indications were that the rectus femoris was used only in the supine position.

12. **Brown, Irene Lou C.** *An Appraisal of the Effectiveness of Dental Health Education in Selected Religious Sponsored Schools.* M.S. in Health Education. 1959. (E. B. Johns)

Pupils in five church-sponsored schools in the San Fernando Valley were given pre- and post-tests on dental health practices and knowledge. Random samples of 100 pre-test papers were drawn for each grade from 3 through 7 and compared with post-test results from the same pupils. Mean gains ranged from 3.11 for seventh-grade practices to .36 for sixth-grade knowledges, with all grades showing improvement in knowledge and practices. For practices, all gains (except grade 6) were significant at the 2 percent level, but for knowledges, only grade 7 improved significantly.

13. **Bynum, Lynne Joy.** *Identifying the Mental Health Problems of Selected College Students.* M.S. in Health Education. 1959. (E. B. Johns)

Students in health education classes during 1954-57 were given the Mooney Problem Check List from which they selected problem and serious problem statements which applied to them. The leading problems of an academic nature were ineffective study habits, being easily distracted from work, and not spending enough time in study. Other serious problem areas were personal-psychological relations and social recreational activities, followed by finances, living conditions, employment, and home and family. The lowest problem areas were morals and religion, and curriculum and teaching procedures. The results followed closely those found in other institutions.

14. **Carroll, Richard Daniel.** *The Relation of Prehension to Bat Swing Velocity.* M.S. in Physical Education. 1959. (L. E. Morehouse)

Twenty varsity baseball players were tested with a Marathon Velocity Bat using five experimental grips which differed in the alignment of the knuckles of the right and left hand. Each subject took three swings with each grip. Maximal velocity was attained when the middle knuckles of both hands were aligned, indicating that this position allowed a greater range of motion in the wrist joint. The diagonal motion was from the extended to the flexed position with ulnar deviation of the wrist. The other grips had a smaller range of motion for the wrist joints and the flexors of the fingers were less powerful as the wrist assumed a more flexed position.

15. **Carter, Lawrence Franklin.** *The Effect of Warm-up Activities on Fatigue in Endurance.* M.S. in Physical Education. 1959. (L. E. Morehouse)

Fifteen subjects were tested on pedalling a bicycle ergometer at 15 mph. with a 7.5 pound resistance to exhaustion after no warm-up, after one, and after five minutes of warm-up at 10 mph. with no load and a two-minute rest period. Mean duration of performance was significantly greater at the 5 percent level with no warm-up, compared with both one-minute and five-minute warm-up. One-minute warm-up was significantly better than five-minute warm-up. Warm-up appeared detrimental for endurance activity.

16. **De Vorss, Patricia Eileen.** *An Evaluation of Synchronized Swimming Practices.* M.S. in Physical Education. 1959. (M. E. Latchaw)

17. **Dixon, Peter Lee.** *Development of Criteria for Safe Usage of Self-Contained Underwater Breathing Apparatus.* M.S. in Physical Education. 1959. (L. E. Morehouse)

Safety procedures for SCUBA were developed from a review of the literature and from interviews with members of the Divers Certification Board at Scripps Institute of Oceanography, the University of California, and the Los Angeles Country Underwater Recreation Department. Physical and physiological factors, equipment limitations, and marine environmental conditions were considered. Data were collected on types of diving accidents, and causes were analyzed. The criteria concerned aptitude and personality, use of equipment and safety techniques, planning safe dives, first aid, and emergency procedures.

18. **Dyrr, Gilbert Eugene.** *A Preventive, Developmental, and Habitative Program of Physical Education for Tenth Grade Boys.* M.S. in Physical Education. 1959. (W. M. Massey)

19. **Ellena, Jack Duane.** *Relation of Physiological Factors to Football Performance.* M.S. in Physical Education. 1959. (C. H. Young)

Minutes played during the 1958 football season was used as the criterion. Players were measured in the 50-yard dash, right grip, left grip, and arm push and pull strength. Speed correlated .60 and total strength .40 with the criterion. Both correlations were significant, but the predictive value for minutes played was slight.

20. **Emery, Warren Grant.** *A Study of the Physical Education Program at the California Institute of Technology.* M.S. in Physical Education. 1959. (R. A. Snyder)

The program was evaluated by faculty members on the basis of 50 criteria developed by three national organizations. Faculty evaluations were compared with practices observed over a four-year period. Student opinion concerning the program was obtained from the senior class. The program needed considerable modification to meet the standards of practice used as criteria. Though in partial agreement, the seniors differed significantly from the criteria as to the strengths and weaknesses of the current program. Strengthening the program, discussions between students and faculty, and further evaluation of the program were recommended.

21. **Fink, Harold Milton.** *Specificity of Conditioning in Swimming and Running.* M.S. in Physical Education. 1959. (L. E. Morehouse)

Freshman swimmers and freshman and varsity runners were tested during the first week of practice and retested after six weeks. After a brief warm-up, the subjects ran at maximum speed for 30 seconds on one day and swam for 30 seconds the following day. The pulse rate step-down method was employed to determine how quickly the cardiovascular system recuperated. The experimental results supported the principle of specificity of training in that gains in general endurance and cardiovascular efficiency acquired in training for one sport made only slight contribution to performance in the other sport.

22. **Fodor, John Theodore.** *An Analysis of the School Health Program in Seventy-One Schools of the Los Angeles City School District.* M.S. in Health Education. 1959. (E. B. Johns)

As part of a larger evaluation study in the Los Angeles region, questionaires were developed by personnel from the Los Angeles City School and outside consultants. Healthful school living, health services, and health instruction were appraised in elementary schools, junior and senior high schools, and junior colleges. Item analysis and comparison showed that the elementary program was relatively strong, but higher educational divisions had progressively weaker programs. The three divisions of the school health program should be integrated by a coordinating committee, and continuous re-evaluation should be employed to achieve program objectives and to meet student needs.

23. **French, Roger Lawrence.** *Factors Related to Low Hurdling on a Curved Track.* M.S. in Physical Education. 1959. (W. M. Massey)

Survey of 191 high school coaches throughout the country showed that 64 percent desired experimental comparison of the difference in performance between hurdling on a curved track with the inside (normally left) or outside leg leading. High school hurdlers of moderate ability ran three 120-yard low hurdle races a day for three days. Each day they ran on the straightaway, and clockwise and counter clockwise on the turn, with the runs rotated to nullify the effect of fatigue. Leading with the inside leg was slightly faster, but the difference was not statistically significant. Seven differences in form which favored leading with the inside leg were noted, together with the effect of centrifugal force.

24. **Gino, George William.** *A Comparative Analysis of Interschool Competitive Athletics in Junior High School.* M.S. in Physical Education. 1959. (W. M. Massey)

Review of the literature showed extensive difference of opinion concerning the advantages and disadvantages and possible physiological, psychological, and sociological effects of interschool competition on boys in junior high school, but showed little scientific or experimental evidence.

25. **Goldbloom, Erwin Martin.** *Initiating a High School Wrestling Program.* M.S. in Physical Education. 1959. (W. M. Massey)

Review of the literature, together with questionnaires and interviews in the Southern California area, indicated that the best method for initiating wrestling was to start with class instruction in the fall, organize an intramural tournament, and then develop a varsity team—all of which can be done in one year. Public apathy and administrative resistance to the high initial cost hinder initiating a program, but the low injury rate, low cost of sustaining the program, and opportunity for boys of all sizes to participate in the program favor it. The program can be initiated and maintained by a person without wrestling experience, provided he knows the principles of teaching and coaching and is willing to study and learn wrestling techniques.

26. **Hanlon, Janice Crawley.** *A Descriptive Study of the Principles of Organic Form in Painting, Drama, and Modern Dance.* M.S. in Physical Education. 1959. (A. M. Hawkins)

Review of the literature showed that organic form was organization for the appropriate expression of the intent of the artist depending on the following principles common to the three art forms: *unity*—integrated wholeness; *contrast*—striking differences; *balance*—equilibrium between elements; *climax* (dominance, emphasis)—intensification of principal elements; *repetition* (rhythmic repetition, rhythm)—regular or irregular recurrence; *variety*—alteration of original elements; *sequence* (continuity, progression)—rhythmical progression; *harmony*—esthetic integration; *proportion*—appropriate relationship of elements; and *transition*—gradual or sharp change from one element to another. The artist must observe these principles consciously or unconsciously to achieve a meaningful composition.

27. Hoag, William Curtis, Jr. *The Correlation of Achievements in Physical Education Activities, Scholastic Achievement, and Selected Factors of Personal and Social Adjustment.* M.S. in Physical Education. 1959. (W. M. Massey)

28. Holland, Charles Henry. *Relationship of Pelvic Inclination to Anterior Hip Flexibility.* M.S. in Physical Education. 1959. (V. Hunt)

Classifications of lordotic, normal, or flat-backed were made for 126 senior high school boys on the basis of the standing pelvic-femoral angle. Tightness of the hip flexor muscles was measured twice in the supine position and used to determine reliability. Height and weight were measured and correlated with pelvic-femoral angle. Critical ratios among the three groups failed to show significant differences for height, weight, or tightness of the anterior hip flexor muscles.

29. Jacobs, David John, Jr. *Principles of Teaching the Mentally Retarded Child in the Physical Education Program.* 1959. (R. Abernathy)

Review of the literature (mostly books since few articles dealt with the mentally retarded) showed that mentally retarded children were similar in having a slow rate of learning, a short span of attention and memory, little ability to associate, reason, evaluate, and direct themselves, and a need for repetition, review, and immediate, tangible goals. Implications for physical education were developed from these similarities.

30. Jennings, Elizabeth Ann. *An Analysis of the Adjustment Problems of the Mentally Retarded with Implications for Physical Education.* M.S. in Physical Education. 1959. (V. Hunt)

To achieve their optimum growth, development, and adjustment, mentally retarded pupils should be enrolled in regular physical education classes only after consideration of teacher attitude, maturity of other pupils, class size, and their ability to succeed in the class. Suggestions were made concerning instructional methods and selection of suitable games and activities for the mentally retarded.

31. Kahn, Joel Stephen. *A Comparison of Various Patterns of Practice in Bowling Achievement.* M.S. in Physical Education. 1959. (W. M. Massey)

Junior high boys were divided into three groups of eight and were assigned randomly to learn bowling with massed practice (one session each school day for nine days), distributed practice (one session/week), and massed-distributed practice (interpolated rest increased toward end). Subjects bowled 15 consecutive balls. Comparisons based on scores for the first, fifth, and final session, and also for total score, showed no significant gains and no significant differences.

32. Keogh, John Francis. *The Relationship of Motor Ability and Athletic Participation In Certain Standardized Personality Measures.* Ed.D. 1959. (M. S. MacLean and R. Abernathy)

The Larson Test of Motor Ability and the California Psychological Inventory were administered to 167 upperclass male students at Pomona College. Subjects were classified as having high, medium, or low motor ability and as having varsity, intramural, or no athletic experience. Two-way classification gave nine sub-groups. Analysis of variance for the 18 scales of the CPI, first between athletic participation groups and second between motor ability groups, showed insignificant mean differences. On the total test response, the low and middle motor ability groups tended to rank higher and within the participation groups. Athletic participation had no apparent effect on the CPI scores, in contrast to previous studies. Athletic and non-athletic group differences on the total test response tended not to hold for motor ability groups separately, but certain motor ability group differences were similar for the separate participation groups. This suggested that higher ratings were achieved by groups of subjects who participated in athletics at a level consistent with their motor ability, and also that having been "athletic" or an "athlete" depends in part on the subject's environment as well as his motor ability and personality.

33. KING, ALAN JOHN CAMPBELL. *The Effect of Student Rating on Teacher Behavior.* M.S. in Physical Education. 1959. (C. H. Young)

Twelve hundred students from 10 schools in Ontario, Canada, rated 10 physical education teachers and 10 teachers of other subjects. Each teacher was rated by two of his classes and given the composite results. A second rating ten weeks later showed that 15 teachers had improved, two had remained the same, and three were rated lower. Disciplinary methods showed the greatest improvement, but some aspects of teacher behavior were more resistant to change. The students were capable observers, with considerable understanding and appreciation of teacher behavior and with understanding of the factors that connote good teaching. Use of the questionnaire improved most of the teachers and also teacher-student relations.

34. KOZLOW, BEVERLY KAY. *A Comparative Study of Two Educational Methods for Pre-Nursery School Cerebral Palsied Children.* M.S. in Physical Education. 1959. (V. Hunt)

Ten children from 18 months to three years of age in a school using integrated therapy (educationally oriented) were compared with a similar group under isolated therapy (clinically oriented) over a six-month period. Head and chest circumference and height and weight were measured for physical development. Various performance gains were evaluated by the entire staff. Significantly greater mean development level in all areas tested was evident in the group under isolated therapy throughout the period, but the mean percent increase was significantly greater for the group with integrated therapy.

35. LARK, JOHN H. *The Utilization of Student Interests in Planning a Seventh and Eighth Grade Physical Education Program for Boys.* M.S. in Physical Education. 1959. (M. E. Latchaw)

As a basis for an interest-centered program, boys in two schools were surveyed. Basketball was the most popular sport, probably because of seasonal bias, and growing interest in girls was evident from the strong preference for co-educational activities. Boys in both grades indicated a strong preference for team sports—particularly the seventh—and eighth graders showed wide interest in individual sports as well, especially swimming and bowling.

36. LONDON, SHEILA. *Speed and Accuracy in Two Backhand Tennis Grips.* M.S. in Physical Education. 1959. (W. M. Massey)

Ten advanced tennis players normally using the eastern grip and four using the continental grip were tested after adequate practice with both grips for speed (reliability .845), accuracy (.604), and speed and accuracy (.680 and .866 for the parts respectively). Fifteen trials with each grip were used in each part of test. Collectively, the subjects performed better in the speed test, the accuracy test, and the accuracy part of the speed and accuracy test with the continental grip and better on the speed part of the last test with the eastern grip. Differences were at the 20 to 30 percent level of confidence for each group and the combined group.

37. MAGNANTE, TONY. *The Value of Little League Participation to Varsity Baseball Success in High School.* M.S. in Physical Education. 1959. (N. P. Miller)

In five high schools, 58 of 80 varsity players had participated in Little League. One coach had 180 boys attend the initial practice; another thought more teams below the varsity level would be needed, and another thought many boys developed bad habits because of poor coaching.

38. MCINTYRE, AUDREY ANN. *Modern Dance Choreography for the Television Medium.* M.S. in Physical Education. 1959. (A. M. Hawkins)

From a review of the literature, evaluation of statements by a jury of experts, and interviews, special considerations in choreographing modern dance for television were formulated to assist in formulating esthetically satisfying results.

39. McMinn, Richard Dean. *Academic Achievement of Secondary School Athletes and Non-Athletes.* M.S. in Physical Education. 1959. (W. M. Massey)

40. Miller, Jean Lewis, Jr. *An Analysis of the Physical Fitness of Junior High School Pupils.* M.S. in Physical Education. 1959. (W. M. Massey)

41. Moore, Johnna Lee. *The Relationship of Design to Movement.* M.S. in Physical Education. 1959. (R. Abernathy)

42. Nelson, Marita Lee. *The Effect of Moderate Physical Training on Oxygen Consumption and Ventilation Efficiency.* M.S. in Physical Education. 1959. (W. M. Massey)

The breathing patterns of 19 women in intermediate swimming and 15 women in archery classes were recorded with a respirometer while they were walking on a treadmill at 0 percent grade and 3.5 mph. Comparison of pre-test and post-test results with 12 weeks intervening showed no significant differences in oxygen consumption, breathing rate, depth of breathing, and ventilation efficiency for both classes. But a significant decrease in minute volume of breathing for both classes indicated that participation in either activity produced greater efficiency in breathing.

43. Nunney, Derek Normond. *Relation of Circuit Training to Swimming Endurance.* M.S. in Physical Education. 1959. (R. Abernathy)

Two groups of 12 college men were equated on the basis of distance swum in 15 minutes with the front crawl and were tested in swimming speed over 33-1/3 yards, height, weight, and ability to perform chins, dips, vertical jump, and push-ups. The control group had swimming only. The experimental group combined circuit training with swimming. Retest results after six weeks showed that the experimental group had made significant gains in all tests, except dips. The control group made significant gains in swimming endurance and weight but lost markedly in strength—poorer performance in chins, push-ups, and vertical jump. The experimental group made significantly greater gains than the control group in weight and chins and approached closely a significantly greater gain than the control group at the 5 percent level in swimming speed. Circuit training, which included weight training, was at last not detrimental to swimming performance.

44. Parks, Jack Dennis. *Comprehensive Knowledge Examination in Track and Field.* M.S. in Physical Education. 1959. (W. M. Massey)

45. Pike, Kenneth Vernon. *Natural Science Experiences Significant to Elementary School Programs of Outdoor Education.* Ed.D. 1959. (W. H. Dutton, A. L. Berry)

Desirable natural science experiences for elementary school outdoor education were selected from the literature. Criterion statements and a check list of natural science experiences were constructed and submitted to a jury for evaluation. After modification and refinement, a guide for evaluating natural science experiences in outdoor education programs was developed. The findings of the study indicated that the elementary school should assume major responsibility for developing interest and understanding of natural science and conservation through outdoor education in the natural environment.

46. Pinon, Remedios Villanueva. *A Guide to Rhythmic Activities for Elementary School Teachers of the Philippines.* M.S. in Physical Education. 1959. (J. B. Saurborn, E. T. Bell)

47. Porter, Barry Frank. *A Statistical Analysis of the Performance of Boys at West Covina High School in Selected Aspects of Physical Fitness.* M.S. in Physical Education. 1959. (M. E. Latchaw)

48. Power, William Brainerd. *A Knowledge Test in Touch Football for Junior High Boys.* M.S. in Physical Education, 1959, (W. M. Massey)

49. **Pullman, Morton Abbot**. *Basis for Determining Facility Needs for Organized Resident Camps.* M.S. in Physical Education. 1959. (C. H. Young)

From past trends in various areas of camping, concerning age, sex, and types of camps attended, and leisure time, population, and labor force trends, 150,000 campers (50,000 increase) seemed probable in the Southern California area within the next 15 years. This would necessitate construction of 75 to 100 new camp sites and additions to existing camps. The majority of campers would be between 8 and 14 years of age and 60 percent male. As in the past, organizational (church and school district) camps should accommodate over 50 percent of the campers and have a great potential for expansion.

50. **Rayborn, Joanne Moody.** *Manifestation of Independence in a Physical Education Setting.* M.S. in Physical Education. 1959. (C. Brown)

51. **Richardson, Charles Everett.** *Pre-Test Instruments for Measuring Health Attitudes of College Students.* Ed.D. 1959. (E. B. Johns)

52. **Ringlund, Natalie.** *The Role of Calisthenics in Meeting Selected Needs of Girls.* M.S. in Physical Education. 1959. (C. Brown)

53. **Rodick, Miles Ivan.** *Forces Affecting the Development of the Sport of Volleyball in the United States.* M.S. in Physical Education. 1959. (R. A. Snyder)

William G. Morgan initiated volleyball at Holyoke, Massachusetts, in 1895 as an indoor diversion with simple rules and equipment. Schools, playgrounds, and especially the YMCA fostered the game. Servicemen learned the game during World War I and helped spread it throughout the United States. Following a national tournament, the United States Volleyball Association was formed in 1928 to provide centralized leadership. The rate of growth slowed during the depression, but interest continued and the doubles game was introduced. World War II brought another upsurge in participation, followed by refinement in rules and techniques. The International Volleyball Federation was formed in 1947, and in 1957 the International Olympic Committee added volleyball to the Olympic Games.

54. **Rump, Robert Eugene.** *The Relation of Two Styles of Tennis Grips on Learning Achievement.* M.S. in Physical Education. 1959. (W. M. Massey)

55. **Schrom, Patricia Joan.** *An Appraisal of the School Nurse Health Education Activities in the Inglewood Unified School District.* M.S. in Health Education. 1959. (W. Sutton)

56. **Schubert, Janet Margaret.** *A Study of Attitudes of Junior High School Girls Toward Selected Sports Activities.* M.S. in Physical Education. 1959. (M. E. Latchaw)

57. **Selsor, Robert Gordon.** *Speed and Accuracy of Overarm and Sidearm Throwing.* M.S. in Physical Education. 1959. (W. M. Massey)

Ten skilled subjects threw ten or more times, using overarm and sidearm throw, at a target with concentric circles set 80, 105, and 130 feet from a low pedestal on which the ball rested at about the height of a low ground ball. Speed was measured as the duration from picking the ball off the pedestal to hitting the target in hundredths of a second. The results showed no significant differences between sidearm and overarm throws either in speed or accuracy. The speed of both types of throws was highly correlated at each distance. Accuracy was moderately correlated at 105 feet, but the correlations were essentially zero for the shorter and longer distance. An expected advantage for the speed of the overarm throw at longer distance was not found, possibly because the longest distance was too short.

58. **Sharples, Genevah Toot.** *An Investigation of the Place of Physical Education in a Continuation School.* M.S. in Physical Education. 1959. (W. M. Massey)

59. **Shillman, Esther Reiff.** *The Application of Art Form Principles to Elementary Modern Dance Composition.* M.S. in Physical Education. 1959. (A. M. Hawkins)

60. **Spearman, Josephine Elizabeth.** *An Analysis of Opinions of Pupils, Parents, and Educators toward Modern Dance Program in Selected Secondary Schools.* M.S. in Physical Education. 1959. (A. M. Hawkins)

61. **Spencer, Richard Ronald.** *A Study of Ballistics in the Mat Kip.* M.S. in Physical Education. 1959. (C. H. Young)

Determination of the most effective range and angle of incidence of the leg thrust and the optimum angle for projecting the body was attempted by comparing successful and unsuccessful kips from the mat. The subjects were 28 male, physical education majors who, after preliminary instruction and two warm-up trials, attempted the kip three times, with the final trial recorded in 16 mm movies. One group also had the three trials judged visually. Measurement of hand and foot placement, leg thrust, and back gather was facilitated by a 4 by 8 foot protractor and special markings on the mat. Leg thrust proved to be the essential factor contributing to successful performance since correlations with leg thrust and between hand placement, foot placement, and back gather were relatively low. The correlation of visual measurements of back gather and leg thrusts with those from the film was high, indicating that these could be judged visually with sufficient accuracy.

62. **Swisher, Ivan Wesley.** *Selected Criteria for the Evaluations of the Administration of College Physical Education.* Ed.D. 1959. (L. N. Morrisett, R. A. Snyder)

The validities of 269 proposed criteria for evaluating an administrator's effectiveness in dealing with personnel, basic physical education, budget, facilities and equipment, and public relations were determined. The proposed items in the checklist were rated from 5 (excellent) to 0 (not applicable) by 26 experts. Items were retained which differed significantly from neutral at the .01 level according to the Dixon-Mood Sign Test. A question arose in dichotomizing the six-point scale as to whether a rating of 3 (fairly high) was slightly positive, as intended, or actually neutral, since the raters may have considered 0 (not applicable) entirely separate from the other five ratings. A less sensitive, four-point scale (indispensable, desirable, unimportant, not applicable) might have been better for use with the Sign Test.

63. **Ura, Ted Tadashi.** *A Proposed Physical Education Program for Boys at Hilo High School in Hawaii.* M.S. in Physical Education. 1959. (W. M. Massey)

64. **Weiner, Charles Maurice.** *Criteria for Evaluating Films in Health Education.* M.S. in Health Education. 1959. (W. Sutton)

Criteria for evaluating health films were lacking in authoritative health literature and selection of films for classroom use has tended to be haphazard. Evaluative criteria were developed from the related literature on health education and film evaluation. The criteria were tested by evaluating selected health films, and the revised criteria were appraised by a jury of experts and revised again on the basis of consensus of opinion as to desirable changes. The experts considered the average health teacher not qualified to judge the accuracy of all information in health films or to evaluate the reliability and reputation of organizations producing health films.

65. **Yanis, Olgha Rubina.** *A Prospectus of Physical Education for Secondary School Girls in Panama.* M.S. in Physical Education. 1959. (C. Brown)

University of Colorado, Boulder, Colorado (E. Willis)

66. **Green, Catherine.** *A Study of the Performance of Seventh Grade Girls on the American Association for Health, Physical Education and Recreation Youth Fitness Test.* M.S. in Physical Education. 1959. (E. Abbott)

67. Ryan, Barbara Jean. *An Investigation of Certain Aspects of Strength of the Plantar Flexor, Dorsal Flexor, Pronator and Supinator Muscles Groups of the Foot of College Women with and without Pronation of the Feet.* M.S. in Physical Education. 1959. (E. Abbott)

Eastern Illinois University, Charleston, Illinois (J. W. Masley)

68. Hart, David L. *Physical Education Curriculum for Boys, Senior High School, Edwards County Community Unit District #1, Albion, Illinois.* M.S. in Ed. 1959. 92 p. (J. W. Masley)

69. Jacobs, Virgil Morris. *The History of Basketball at the Eastern Illinois University.* M.S. in Ed. 1959. 124 p. (J. W. Masley)

George Peabody College for Teachers, Nashville, Tennessee

70. Nesom, Guy Wilburn. *An Evaluation of Physical Education in Public High Schools of Louisiana.* Ed.D. 1959. (S. B. Sudduth)

A survey was made of physical education programs in senior white public high schools of Louisiana, using a stratified random sample of 100 schools. Physical education was required in Louisiana high schools as early as 1917. Louisiana was one of the first states to employ a full-time supervisor, J. E. Lombard, in 1918. Louisiana's first state course of study in physical education, one of the earliest in the United States, was prepared in 1917. The survey covered personnel, required classes, intramural sports, interscholastic athletics, health education, facilities and equipment, financial support, and community resources. In the 100 schools studied, 324 instructors were teaching or coaching at least one physical education class or varsity sport, representing 24 percent of all the teachers in these schools. Although 63 percent of the schools required daily physical education, less than 20 percent of the schools required daily physical education and less than 20 percent used written curriculum plans. A definite plan of measurement to determine progress toward program objectives was used in only about one-fourth of the schools.

71. Parham, Donald Albert. *A Study of Physical Education Programs in White Public Secondary Schools of Arkansas.* Ed.D. 1959. (S. B. Sudduth)

The purpose was to evaluate the program of physical education in the white public secondary schools of Arkansas. Fifty-one statements of principles dealing with the curriculum, staff, facilities, and general organization of programs were formulated by the author for use as criteria. A jury of 20 Arkansas educators appraised each principle on the basis of the importance of the principle, the degree of difficulty in applying the principle, and the factors which would most likely hinder the application of the principle. Stratified-random sampling was used to select 40 schools according to size and geographical location. The visitation method was employed to collect data from 100 school administrators and physical education teachers.

72. Thomas, Charles French. *A Follow-Up Study of Northwestern State College Graduates in Physical Education Since 1950.* Ed.D. 1959. (S. B. Sudduth)

The purpose was to determine how well the Department of Physical Education of Northwestern State College of Louisiana prepared graduates for the existing job requirements. The critical incident and analytical survey methods of research were used. The results indicated that the supervision of practice teaching should be evaluated; the football coaching courses should include scouting and demonstration of fundamentals; tests and measurements should be required at the undergraduate level; public relations should be stressed; male graduates should be motivated to take an active part in professional organizations; the staff should emphasize the need for displaying initiative and assuming responsibilities; opportunities to learn to repair, construct, or secure equipment should be made available; methods for utilizing small play areas should be stressed; and staff members should contact graduates periodically.

George Williams College, Chicago 15, Illinois (C. O. Paulson)

73. **Aikins, Alfred B.** *Water Diuresis Under Varying Conditions.* M.S. in Health Education. 1959. 41 p. (A. H Steinhaus)

74. **Berg, Harold R.** *A Comparative Study of Operating Ratios of the Evanston YMCA With Those of Similar Associations.* M.S. in Group Work Administration. 1959. 57 p. (J. R. McCurdy)

75. **Dabney, Rufus F.** *An Interpretation of Christian Emphasis for Program as Expressed by the Staff of the Chatham YMCA of Chicago and Moorland Branch YMCA of Dallas.* M.S. in Group Work Administration. 1959. 72 p. (S. M. Duvall)

76. **Dubois, L. Carl.** *The Community Youth Program Secretary of the Pacific Southwest Area—A Story in Color Slides.* M.S. in Group Work Administration. 1959. 42 p. (U. B. Stone)

77. **Hedstrand, Theodore M.** *Relationship Between an Empirical Weight Lifting Practice and Muller's Experiments on Muscle Growth.* M.S. in Physical Education. 1959. 26 p. (N. M. Miner)

78. **Ishikawa, Ralph K.** *A Study of the Education, Job, and Professional Problems of Town and Country Secretaries in Executive Positions.* M.S. in Group Work Administration. 1959. 45 p. (J. Claypoole)

79. **Johnson, Evelyne N.** *The Effect of Injection of Nicotine on the Sex Drive of White Rats, as Reflected in Spontaneous Running Activity.* M.S. in Physical Education. 1959. 51 p. (N. M. Miner)

80. **Long, Ernest Pierce.** *A Comparison of the Attitudes of Parents and Their Sons Toward the Misbehavior of Adolescents.* M.S. in Group Work Administration. 1959. 71 p. (D. Reitzes)

81. **McLean, Eugene J.** *Contributions of the Secondary School Physical Education Program to Psycho-Social Development of Participants.* M.S. in Physical Education. 1959. 74 p. (D. E. Misner)

82. **Mason, Wilbur D.** *A Study of the Leadership Provided for School-Centered Hi-Y Clubs in the State of Texas.* M.S. in Group Work Administration. 1959. 64 p. (R. S. Case)

83. **Miller, Coleman.** *A Twelve-Year History of the Farish Street Branch YMCA of Jackson, Mississippi, 1946-1958.* M.S. in Group Work Administration. 1959. 85 p. (U. B. Stone)

84. **Miller, David C.** *The American Indian Center, its History, Program, and Results.* M.S. in Group Work Education. 1959. 68 p. (D. E. Misner)

85. **Phipps, Jack R.** *The Relationship Between Pre-College Formal and Informal Group Experience and College Extra-Curricular Participation of George Williams College Students.* M.S. in Group Work Administration. 1959. 54 p. (D. Reitzes)

86. **Prater, Sheila M.** *Group Psychotherapy and Its Use With Adolescents.* M.S. in Group Work Administration. 1959. 31 p. (S. M. Duvall)

87. **Rick, Robert.** *A Study of the Professional Preparation and Work Load of Selected Resident Camp Directors of the YMCA.* M.S. in Group Work Administration. 1959. 45 p. (R. S. Case)

88. **Riley, Howard E.** *A Study of Parental Concern of Delinquent and Non-Delinquent Boys' Parents for the Boys' Proper Use of His Leisure-Time.* M.S. in Group Work Education. 1959. 39 p. (D. Reitzes)

89. **Sears, Arthur.** *A Study of the Method for Supervising Field Work Students Employed by Leisure-Time Agencies.* M.S. in Group Work Administration. 1959. 68 p. (H. A. Mullen)

90. SHARP, JOHNNY B. *The Impact of Physical Education on Boy Members of Two YMCA's.* M.S. in Group Work Administration, 1959. 85 p. (D. Reitzes)

91. SIMPSON, WILLIAM A. *Responsibilities of YMCA Physical Directors for Groups Other Than Physical Activity Groups.* M.S. in Group Work Administration. 1959. 44 p. (J. Claypoole)

92. SMITH, ELLIS. *A Comparative Study of the South Chicago Community Center and the South Chicago YMCA as to Stated Purposes and Objectives, Facilities, Program Constituency and Leadership.* M.S. in Group Work Administration. 1959. 71 p. (D. Reitzes)

93. THOMPSON, DONNIS H. *Comparison of the Suitability of Two Shot-Put Styles for High School Girls.* M.S. in Physical Education. 1959. 39 p. (E. Klinckman)

94. YARD, WILLIAM E. *A Study of Three Specific Areas in the Administration of Canadian YMCA Children's Camps.* M.S. in Group Work Administration. 1959. 83 p. (R. S. Case)

Illinois State Normal University

95. BALZHISER, SHIRLEY. *Relationship Between General Motor Ability and Attitudes of High School Girls Toward Physical Education.* M.S. in Physical Education. 1959. 51 p. (E. D. Kelly)

Wear's Adapted Attitude Inventory (revised by Marian Kneer for the high school level) and Scott's General Motor Ability Test were administered in three high schools which differed considerably in facilities and equipment for physical education. The level of general motor ability was equal to or slightly above that reported in the literature. The mean differences in general motor ability were not statistically significant. Attitudes toward physical education in general were favorable and the mean differences were not statistically significant. The correlations between general motor ability and attitudes toward physical education in the three high schools were very low but significant at the .1 percent level.

96. BEALES, JAMES RONALD. *Qualifications of Physical Education Teachers and Coaches in Selected Junior Colleges.* M.S. in Education. 1959. 62 p. (J. E. Collie)

97. GARRETT, DONALD EDWARD. *A History of the Intercollegiate Athletic Program at Illinois State Normal University.* M.S. in Education. 1959. 56 p. (C. E. Horton)

98. HEITHOLD, DOROTHY. *Factors Related to Intramural Participation and Non-Participation for High School Girls.* M.S. 1959. 58 p. (E. D. Kelly)

The study compared 131 members of the Girls Athletic Association and 132 non-members as to general motor ability, attitude toward physical education, intelligence, physical education grades, and other items concerning participation, surveying through a check list. GAA members showed statistically significant differences (.01 level) in reactions which were higher or more positive than non-members with regard to motor ability, grades in physical education, number of school club memberships meeting after school hours, amount of time available for voluntary activities, interest in earning awards, and after school appointments. GAA members agreed more strongly than non-members that they liked to play sports with boys, that boys liked girls who were interested in sports, that they would like still more activities in which they could participate with boys, that they had good skill in sports, were informed regarding GAA, and had more friends among GAA members. While not statistically significant at the .01 level of confidence, differences in each case favoring GAA members were found in extent of club membership outside school sponsorship, time spent on homework and home duties, having fewer activity dislikes, and estimation of one's physical condition.

99. IRVIN, RICHARD FREDERICK. *The Etiology, Pathology, Prevention and Treatment of "Tennis Elbow."* M.S. in Education. 62 p. (E. L. Hill)

100. **Kochalka, William Francis.** *School and Community Use of School Swimming Pools.* M.S. in Education. 64 p. (E. L. Hill)

University of Illinois, Urbana, Illinois

101. **Aly, Martha Alice.** *Ethical Concepts for Recreation Professionals.* M.S. in Recreation. 1959. 142 p. (C. K. Brightbill)

102. **Armstrong, Marvin R., Jr.** *A Study of Conditions Relative to the Safe Operation and Use of Playgrounds.* M.S. in Recreation. 1959. 71 p. (A. V. Sapora)

103. **Austin, Jeffrey Miner.** *Cinematographic Analysis of the Double Backward Somersault.* M.S. in Physical Education. 1959. 41 p. (A. W. Hubbard)

104. **Bare, Frank Lee.** *A Cinematographic Analysis of the Stutzkehre on the Parallel Bars.* M.S. in Physical Education. 1959. 61 p. (A. W. Hubbard)

105. **Breen, James Lowell.** *Anxiety Factors Related to Some Physical Fitness Variables.* Ph.D., Physical Education. 90 p. (T. K. Cureton)

106. **Chase, Ronald W.** *A Plan for the Layout and Design of a Preschool Play Lot.* M.S. in Recreation. 1959. 73 p. (A. V. Sapora)

107. **Churchill, John W.** *An Analytical Study of the Meaning of the Term "Recreation."* M.S. in Recreation. 1959. 87 p. (C. K. Brightbill)

108. **Clark, Donald E.** *A Recreation Survey of Mattoon, Illinois, and Vicinity.* M.S. in Recreation. 1959. 108 p. (A. V. Sapora)

109. **De Carlo, William B.** *An Analysis of the Effects of Job Responsibilities Upon the Lives of the Recreation Executive and his Family.* M.S. in Recreation. 1959. 69 p. (C. K. Brightbill)

110. **Doroschuk, Eugene Valen.** *The Prediction of All-Out Treadmill Running of Young Boys from Oxygen Utilization Measures, Urbana.* M.S. in Physical Education. 1959. (T. K. Cureton)

111. **Ebarp, Donald F.** *An Analysis of the Attitudes of Public Recreation Administrators in the Great Lakes Region Toward Selected National Recreation Organizations.* M.S. in Recreation. 1959. 72 p. (C. K. Brightbill)

112. **Fletcher, Robert C.** *The Development of Intercollegiate Tennis and Golf at the University of Illinois.* M.S. in Physical Education. 1959. 176 p. (C. O. Jackson)

113. **Fusco, Ronald.** *The Relationship Between Athletic Performance and Intelligence of Varsity Athletes at the University of Illinois.* M.S. in Health Education. 65 p. (F. E. Boys, M.D.)

114. **Gart, Walter.** *A Comparison of Severely Handicapped and Able-Bodied Drivers.* M.S. in Health Education. 1959. 69 p. (A. E. Florio)

115. **Ginn, Ralph Arnold.** *Measurement of Pre-Competitive Emotion.* M.S. in Physical Education. 1959. 70 p. (T. K. Cureton)

116. **Hamai, Herbert Tervo.** *A Survey of the Physical Education Programs in the Public Elementary Schools of Champaign, Illinois.* M.S. in Physical Education. 1959. 102 p. (H. E. Kenney)

117. **Hovis, Watson B.** *An Experimental Survey on the Effects of the Film "Careers in Recreation" Upon Selected Groups of High School Students and Teachers, with Implications for Future Recreation Recruitment Policies.* M.S. in Recreation. 1959. 101 p. (C. K. Brightbill)

118. **Kuwada, Gordon Y.** *A Manual for Players and Coaches of Wheelchair Basketball.* M.S. in Physical Education. 1959. 89 p. (C. O. Jackson)

119. Leaming, Thomas W. *A Measure of Endurance of Young Speed Skaters.* M.S. in Physical Education. 1959. 43 p. (T. K. Cureton)

120. Lynch, Richard M. *The Circulatory and Metabolic Effects of Preliminary Work on an "All-Out" Performance.* M.S. in Physical Education. 1959. 87 p. (T. K. Cureton)

121. Meadows, Paul Eugene. *The Effect of Isotonic and Isometric Muscle Contraction Training on Speed Force and Strength.* Ph.D. in Physical Education. 1959. 112 p. (C. O. Jackson)

122. Miller, Henry William, Jr. *Effects of Progressive Resistance Exercise on Cardio-Vascular-Respiratory Efficiency as Measured by the Oxygen Pulse.* M.S. in Health Education. 1959. 64 p. (F. E. Boys, M.D.)

123. Milne, William Putnam. *An Analysis of Prescribed Recreation in a Home for the Aged and Disabled.* M.S. in Recreation. 1959. 210 p. (C. K. Brightbill)

124. Niemeier, Donald L. *An Evaluation of Physical Education Programs for Boys in Selected High Schools of Midwestern States.* M.S. in Physical Education. 1959. 91 p. (C. O. Jackson)

125. Pleckinger, Joseph A. *The Study of Concession Practices of Public Parks and Recreation Agencies in the State of Illinois.* M.S. in Recreation. 1959. 87 p. (A. V. Sapora)

126. Pollock, Michael L. *The Metabolic Cost of Two Exercise Machines on Middle-Aged Women.* M.S. in Physical Education. 1959. (T. K. Cureton)

127. Rajanna, Doddanna N. *The Correlation of Overweight in Men with Assessment of External Body Weight and Muscle.* M.S. in Health Education. 1959. 61 p. (F. E. Boys, M.D.)

128. Roby, Frederick Boys, Jr. *The Effect of Exercise on Regional Subcutaneous Fat Accumulations.* Ph.D. in Physical Education. 1959. (C. O. Jackson)

129. Sakamoto, Richard S. *A Study of the Attitudes and Interests of Students in the Health and Physical Education Service Curriculum at the University of Hawaii.* M.S. in Physical Education. 1959. 107 p. (C. O. Jackson)

130. Shrader, Ray Anne. *Assessment and Evaluation of Recruitment Efforts by Colleges and Universities in the Field of Health Education.* M.S. in Health Education. 1959. 107 p. (G. B. Couch)

131. Skinner, James S. *The Metabolic Cost of the Vibrating Table and a Program of Free Exercise on Middle-Aged Women.* M.S. in Physical Education. 1959. (T. K. Cureton)

132. Slaughter, Mary H. *The Effectiveness of a Test-Centered Method of Teaching Beginning Tennis.* M.S. in Physical Education. 1959. 62 p. (O. G. Young)

133. Tuma, James Wood. *UDT Candidate Attrition, U. S. Navy: The Influence of Exercise and Diet Supplement (Wheat Germ Oil) on Fitness Changes During Training.* Ph.D. in Physical Education. 1959. 507 p. (T. K. Cureton)

134. Turner, Bill J. *A Cinematographical Analysis of a Wrestling Technique—Control of Opponent from Behind.* M.S. in Physical Education. 1959. 62 p. (T. K. Cureton)

135. West, Robert Revere. *The Human Interest Readability of Sixth Grade Health Texts.* M.S. in Health Education. 1959. 52 p. (H. S. Hoyman)

136. Wilson, Glenn Griswold. *A Cinematographic Analysis of the Round-Off.* M.S. in Physical Education. 1959. 38 p. (A. W. Hubbard)

137. Wing, Roger L. *The Development of Intercollegiate Track and Field Athletics at the University of Illinois.* Unpublished M.S. in Physical Education. 1959. 193 p. (C. O. Jackson)

Indiana University

138. **Bailey, Donald A.** *The Effect of a Foreperiod Variation Upon Expectancy as Measured by Simple Reaction Time.* P.E.D. 1959. 114 p. (A. T. Slater-Hammel)

Four randomly selected groups of college-age male subjects were used to study the effect of expectancy upon simple reaction time responses. Reaction times were recorded from a silent electronic chronoscope. The expectancy of subjects trained to respond within a fixed foreperiod range, under the condition of no catch trials, was observed to be an increasing function of foreperiod length within a fixed range, regardless of the length of the range for the number of foreperiods within the range.

139. **Bleick, Frances A.** *In-service Programs for Teachers in the Area of Elementary School Physical Education.* P.E.D. 1959. 252 p. (M. P. Phillips)

A check list on in-service programs was sent to 11 experts in the field for criticisms and recommendations. Twelve in-service practices were considered mandatory for inclusion in an in-service program and the total list of 59 items in the check list was considered desirable. The revised check list was sent to supervisors in 155 cities; 136 checklists were returned. Ninety percent of the supervisors utilized 14 in-service techniques and less than 50 percent of the supervisors utilized 8 other in-service practices. Forty-nine of the in-service practices are utilized occasionally.

140. **Bradley, William B.** *Standardization of a Baseball Knowledge Test for College Men Majoring in Physical Education.* P.E.D. 1959. 164 p. (J. B. Daugherty)

The curricular validity of the baseball knowledge test was established by the analysis of baseball textbooks and articles and by the judgments of 33 baseball instructors. Two preliminary forms of the test were administered to 759 male physical education majors in 27 colleges and universities. Each test contained 87 four-option multiple choice items. From 116 test items which met the selection criteria, 80 items were used to develop the final test, which was administered to 1,001 male physical education majors from 32 colleges and universities. The reliability coefficient of the final test was .847, the mean was 47.5, and the standard deviation was 10.37. T-score norms and qualitative ratings were established for the test. The test is valid, reliable, and objective.

141. **Fadali, Mohamed M.** *Proposed Standards for Men's Institutes of Sports Education in Egypt.* P.E.D. 1959. 332 p. (K. W. Bookwalter)

Based upon a review of the related literature, a check list composed of ten areas and 961 standards was constructed. Five American jurors and five Egyptian jurors made up the final jury and rated each standard on a ten-point scale. Standards receiving 50 percent of the maximum points were accepted. The correlation of the final jury with an indefinite number of jurors was .95. The areas in order of importance according to jury ratings were facilities, camping, library and audio-visual aids, general institutional practices, personnel, extra-curricular activities, services, field work experiences, curriculum, and students. Of the 961 standards submitted to the jury, 849 were accepted; 407 were rated as essential, and 442 as indispensable.

142. **Jorgensen, LaVernia.** *A Survey of Recruitment and Selected Practices and Procedures of Women Physical Educators in Colleges and Universities,* P.E.D. 1959. (M. P. Phillips)

A check list, dealing with suggested qualities, procedures, and practices in recruitment and selection, was sent to 460 institutions offering a major in health and physical education, or physical education for women. Of the 280 institutions cooperating in the study, 85 percent recruited women physical education majors, and 94 percent selected women major students. Recruitment procedures included offering scholarships, presenting orientation courses, enlisting aid of former graduates, sponsoring play days, publishing career booklets, personal visits to high schools, and recruiting through college freshman physical education courses. Selection procedures included personal interviews with staff after acceptance as a major, counseling and guidance procedures for weak candidates, good health, and an intelligence test before admission to the physical education program.

143. Kregel, Marinus J. *The Part Method Versus the Whole Method in Teaching Basketball Free Throw Shooting.* P.E.D. 1959. 144 p. (K. W. Bookwalter)

Two equated experimental groups of 20 college freshman boys were used for testing the values of the part and whole methods in teaching basketball free throw shooting for ten 30-minute instruction periods. No statistically significant difference was found between the means of the part and the whole group. There was a statistically significant improvement between the initial and final free throw shooting test for both groups.

144. Kroll, Walter P. *The Relationship of the Interval of Time Between Paired Auditory and Visual Stimuli and Reaction Time.* P.E.D. 1959. 159 p. (A. T. Slater-Hammel)

Twenty subjects were randomly assigned to two experimental groups. Each subject was given four test days under simple response conditions and six test days under paired response conditions. The initial reaction time in paired responses for both experimental groups was significantly slower than corresponding simple reaction time measure. Delays in second response reaction time occurred in both experimental groups when the interval of time between stimulus presentation was 500 milliseconds or less. The pattern of second response reaction time was similar for both experimental groups. Delays in second response reaction times were greater in the visual-auditory sequence than in the auditory-visual sequence.

145. MacLean, Janet R. *An Analysis of Leisure Time Activities of Selected Aged Residents of Bartholomew County, Indiana.* Rec.D. 1959. 271 p. (G. G. Eppley)

A random sample of 100 was drawn from persons who had exceeded present life expectancy by at least 10 years. The people were interviewed to secure information on choice of leisure-time activities, degree of, and general opinions of the aged. The Chi Square test was used for testing relationships. All tests for significance were evaluated at the .05 level of confidence. Participation or interest in the majority of activities was initiated before the age of 21. The first interest in the activity came most often from childhood home and family. No significant relationship was found between the number of activities in which the aged persons engaged and age, years of formal education, place of residence, type of residence, number of persons in the living unit, number of years in retirement, or mental attitude. A significant relationship was found between the number of activities and the health of the aged, their marital status, and income.

146. Nixon, Howard R. *A Score Card for Evaluating Canadian High School Health and Physical Education Programs.* P.E.D. 1959. 174 p. (K. W. Bookwalter)

Curricular validity of the score card was determined through a resource list of 47 professional texts and other printed materials. Relevant validity was obtained by having a qualified Canadian jury of 30 persons accept, revise, and allot proportional weights to each of the 135 items in the 13 areas of the score card. A stratified random sample of 34 high schools in the Province of Saskatchewan was surveyed with the score card by a three-man team. The score card was valid and can be applied with very high objectivity. Evidence indicates that sufficient information is available within the score card for making program improvements.

147. Poole, Richard D. *A Health Knowledge Test for High School.* H.S.D. 1959. 139 p. (D. J. Ludwig)

Curricular validity was established by analysis of nine high school health textbooks. Thirteen major areas of health were selected. Three preliminary test forms were constructed and administered in 17 randomly selected public high schools in Indiana. From the preliminary test results, two final forms were developed and administered to 47 randomly selected public high schools in Indiana (1,248 scores). Reliability coefficients were determined, and norms were established. The two equivalent and interchangeable test forms were valid and reliable instruments for measuring the health knowledge of high school students in Indiana. The tests were economical in time and cost.

148. **Schaller, Warren E.** *Health Needs and Interests as a Basis for Selecting Health Content in Secondary Schools.* H.S.D. 1959. 175 p. (D. J. Ludwig)

Curricular validity for the inventory was established on the basis of critical analysis of high school texts by Greenslade. The 207 inventory statements were set up so that the degree of need or interest could be indicated on a 10-point scale. Four adaptations of the inventory were set up and administered to 501 students, 50 mothers, 50 fathers, 20 health educators, and 17 medical doctors. The reliability correlation (Rho) for the needs inventory was .82 and for the interests inventory was .90. The expressed needs of girls and boys were markedly different. The area of Understanding Mental Health and Mental Illness was given the strongest emphasis by all groups, and Structure and Function of the Body was given the least emphasis. The parents, health educators, and medical doctors were in agreement on the basic needs of the high school student.

149. **Sheard, John Edward.** *The Relative Effectiveness of Teaching Two Basic Swimming Strokes by Two Methods to Nonswimmers.* P.E.D. 1959. 323 p. (J. B. Daugherty)

The crawl stroke and the elementary backstroke were designated as basic swimming strokes, and the pure-part method and part-progressive method were the two methods of teaching in 19 days of instruction to 103 children. The criterion measure was distance and time in swimming toward an object 45 feet from the start. Two by two factorial design was used in analyzing the data. It was not possible to identify the best combination of swimming stroke and method of teaching to use when teaching nonswimmers. The part-progressive method was found superior to the pure-part method. The crawl stroke was found to be better than the backstroke for the initial stroke to teach nonswimmers.

150. **Shuck, Gilbert R.** *The Effects of Athletic Competition on the Growth and Development of Boys in Selected Junior High Schools as Assessed by the Grid.* P.E.D. 1959. 412 p. (K. W. Bookwalter)

Four samples of boys were chosen from grades 7, 8, and 9. Of these, 366 boys could be included in the study of growth and development in terms of physique, developmental levels, and auxodromes as determined by the Wetzel Grid for one year for the ninth-grade boys and two years for the seventh- and eighth-grade boys. Athletes appear to have no retardation in growth and development in the larger body sizes and faster speeds of growth. The highest percentages of growth among the athletes in grades 7, 8, and 9 are likely to be in developmental level interval 150 up, auxodromes 3 up, and physiques B_1 up. Ninth-grade athletes in one interschool sport are superior in quality of growth to ninth-grade athletes in multiple sports. The years of participation, the total games played, and the length of season in interschool sports seem to have no retarding effect on the growth and development of the athletes except for the seventh- and eighth-grade boys in interschool basketball. In intramural sports, there were no retarding effects upon the growth of the boys in grades 7, 8, and 9.

151. **Stopp, George H.** *A Comparison of the Boys Health and Physical Education Programs in Campus, Off-Campus, and General Public Schools in Illinois, Kentucky, and Tennessee.* P.E.D. 1959. 211 p. (K. W. Bookwalter)

Boys health and physical education programs in 32 off-campus schools were compared with those in campus and public schools in the selected three state areas. The Health and Physical Education Score Card II was used as the evaluating instrument. Off-campus school programs, on the average, were only 39 percent effective and merited a *poor* ranking by score card standards. The greatest weakness occurred in the modified-correctives and aquatics areas. Schools with enrollments of 1,000 and more had significantly better programs than schools with fewer than 1,000 pupils. In the combined three state area, off-campus programs were considerably inferior to campus programs, but were appreciably superior to public school programs.

152. Synovitz, Robert J. *The Use of Harmful Health Misconceptions as a Basis for the Selection of Subject Matter and Course Content in College Health Classes.* H.S.D. 1959. 1952 p. (B. I. Loft)

An instrument for determining belief in harmful health misconceptions was selected and administered to students attending basic health information classes in Indiana colleges. Six hundred thirty students were found to believe in harmful health misconceptions. Advertising claims seemed to have a relationship to belief in harmful health misconceptions. The subject matter areas with the greatest percentage of harmful misconceptions were exercise, first aid, and personal hygiene. Significant differences were found between the mean harmful health misconception scores of students according to sex, race, marital status, grade level, major area of academic preparation, and previous college course background. Belief in harmful health misconceptions was not influenced by age, geographic location, religion, rural or urban background, or school attended.

State University of Iowa, Iowa City, Iowa (L. E. Alley)

153. Argotsinger, Jack D. *A Study of Field Goal Attempts in Girls Basketball.* M.A. in Physical Education. 1959. 37 p. (L. E. Alley)

Shot charts of 30 games during the 1958-59 season indicated that winning teams attempted and made more field goals than losing teams; attempts and accuracy decreased with distance; lay-up shots were the most accurate close to the basket; the jump shot was attempted most often, and the two-hand set shot was attempted least often.

154. Bowman, Mary. *Relationship Between Student and Parent Attitudes and Skills of Fifth-Grade Children.* Ph.D. in Physical Education. 1958. 166 p. (M. G. Scott)

The purpose was to determine the interrelationships between motor performance and pupil and parent attitudes and to compare pupil and teacher attitudes in two school systems. At attitude inventory was developed for the fifth-grade children and another for the parents. The attitude inventories and a TAT test were administered. Boys scores were consistently higher than girls on the activity attitude inventories. The girls from a school with little physical education were consistently lower in performance than boys in the same school and than both boys and girls in another school with physical education. Mothers and fathers differ little in their attitudes.

155. Brush, George H. *The Preparation of a Motion Picture Showing the Proper Administration of the Iowa Physical Fitness Test.* M.A. in Physical Education. 1959. 35 p. (F. D. Sills)

A 16-mm. sound motion picture depicting the correct administration of the Iowa Physical Fitness Tests was produced. The performers were 10 seventh-grade students from the State University of Iowa Experimental Schools who were chosen for their ability to execute the skills properly and easily. The effectiveness of the film will depend on its use.

156. Carter, Lolita Dinoso. *A Visual Aid for Teaching Beginning Modern Dance in High School.* Ph.D. in Physical Education. 1958. 72 p. (L. Porter)

The purpose was to develop a modern dance film for use by teachers of dance in high school. A checklist based on the film content was prepared and sent to selected teachers at the high school and college level. The materials and methods of approach to the teaching of dance used in the film were determined by the suggestions of the selected teachers, a review of the literature, and the writer's experience as a teacher of dance. Both experienced dancers and high school girls beginning work in modern dance were used as subjects. The project was filmed by the Motion Picture Production Bureau, State University of Iowa.

157. Casady, Donald Rex. *Effect of Lectures Presented In Required Program of Physical Education.* M.A. in Physical Education. 1959. 391 p. (L. E. Alley)

Five hundred and fifty-five male freshmen in required physical education were divided into an experimental group and a control group. Six tape-recorded lectures covering objectives, principles, and concepts of physical education were presented to the experimental group. Initially, each subject completed a questionnaire on previous experience in physical education, a sports-preference ballot, the short form of the Wear Physical-Education Attitude Inventory, and The Iowa Physical-Efficiency Test. Finally, each subject completed a rating of the attitudes of selected classmates, a rating of his instructor, a questionnaire concerning the college physical-education program, The Wear Physical-Education Attitude Inventory, and The Iowa Physical-Efficiency Test. The findings appeared to justify the conclusion that the lectures increased physical efficiency on the part of the participants but did not change attitudes.

158. **Cheville, Lila A.** *Exploring Movement: An Approach to Modern Dance for the Physical Education Major.* M.A. in Physical Education. 1959. 78 p. (L. Porter)

A sound film and film guide were developed for use in the professional preparation of students in physical education. The film illustrates several techniques that a teacher might use with beginners. Personal experience, a review of the literature, and discussion determined the methods to be included. Advice and evaluation of the script were received from dance specialists. Staff members of the Department of Physical Education for Women served as an advisory committee. Filming, editing, and processing were under the direction of the Motion Picture Production Department.

159. **Divoli, Evangelia.** *Relationship of Fatigue to Certain Measures of Hand Function and Kinesthesis.* Ph.D. in Physical Education. 1958. 49 p. (M. G. Scott)

The purpose was to study interrelationships of fatigue, hand dexterity, strength, and kinesthetic sensitivity. The 76 subjects were given 3 repetitions of the test battery as learning trials prior to fatigue and post-fatigue records. Kinesthesis was not significantly related to either strength or dexterity. Three of the 7 kinesthetic tests showed significant improvement following fatigue and 3 others showed gains which were not significant. None showed significant loss.

160. **Drury, Francis A.** *An Evaluation of Visual Aids In the Teaching of Tumbling.* Ph.D. in Physical Education. 1959. 94 p. (A. J. Wendler)

Nine classes of men selected at random from the physical education program of Louisiana State University were used as subjects. Three of the classes used 8 mm. slow motion pictures as a visual aid, three used drawings, and three observed an average tumbler in action. Four easy and four difficult stunts were taught to all classes. In order to determine the effect of the number of times the visual aid was used, this was varied for each of the three classes. After each instructional period the subjects attempted the stunt three times and were graded by a trained judge. Within the limits of this study, the following conclusions were drawn: the three visual aids were equally effective in teaching tumbling; viewing the visual aid once during the first instructional period, twice during the second and three times during the third was most effective, and variation in the total number of times the visual aid was used had no effect on the learning of tumbling skills.

161. **Elliott, Jacqueline.** *Comparison of Two Methods of Teaching the Forehand and Backhand Drives to Beginning Tennis Players.* M.A. in Physical Education. 1959. 55 p. (J. Homewood)

This study investigated whether there was a difference in learning tennis skills taught by the traditional and the volley methods. In the traditional method, the class executed the basic strokes in drills following an explanation and demonstration. Development of form preceded actual hitting of the ball. In the volley method, the strokes were made as simple as possible with concentration on one thing at a time. The ball was first tossed to the player 4 to 6 feet from the net, who volleyed it to a given target across the net. The two groups were equated on the composite scores from the Scott Motor Ability battery. Classes met for 15 lessons of 90 minutes each. Final achievement was measured by administration of a modified form of the Dyer test. The *t* test showed no significant difference.

162. Estes, Mary Margaret. *Role of Creative Play Equipment in Developing Muscular Fitness.* Ph.D. in Physical Education. 1959. 84 p. (M. G. Scott)

This was an experimental study in developing the muscular fitness of third-grade children over a 10 weeks' period. A control class had games and rhythms, while the experimental class worked on climbing ropes, doorway gym bar, parallel bars, a small vaulting box, horizontal ladder, and balance pole. Tests involved strength, flexibility, balance, and agility. The experimental group improved on all eight tests given, significantly on six. The control group showed significant improvement on four tests and some improvement on the others.

163. Greenlee, Geraldine. *The Relationship of Selected Measures of Strength, Balance and Kinesthesis and Bowling Performance.* M.A. in Physical Education. 1958. 48 p. (L. Magnusson)

Tests of leg strength, grip strength, arm and shoulder girdle strength, static and dynamic balance, and various measures of kinesthesis including wrist extension, rotatory positioning of the forearm, and forward weight shift were administered to 122 beginning bowlers during the last two weeks of an eight-week bowling course. These test results were correlated with an average of the last 6 games bowled. A significant, positive relationship was found between dynamic balance and bowling performance.

164. Hall, Mary Frances. *A Study of Two Methods of Teaching Bowling to College Women of High and Low Motor Ability.* Ph.D. in Physical Education. 1958. 54 p.

In the whole method, the entire skill was presented with no practice on separate parts. In the part method, the bowling approach was broken down into component parts which were practiced separately before combining them in a coordinated whole. Cumulative averages of game scores were used as the measure of bowling ability. In both the high and low motor ability groups, no statistically significant difference was found.

165. Hansen, Gary Fremodt. *Relationship of Different Types of Warmup to Performance In the 440-yard Run.* M.A. in Physical Education. 1959. 21 p. (F. D. Sills)

Three varsity and three freshman members of the State University of Iowa track squad served as subjects. Each subject ran a 440-yd. run after no warm-up, a 10-minute warm-up, and a 5-minute application of cold packs followed by a 10-minute warm-up. After running, each subject walked and jogged for 20 minutes and then ran another 440. Each subject was tested three times for each procedure. No significant relationship was found between the time required for a 440-yard run and the three procedures used before each run.

166. Harsch, Larry A. *A Comparative Study of the Reaction-times and Response-times of Negro and White Athletes.* M.A. in Physical Education. 1959. 44 p. (A. J. Wendler)

Twenty-seven Negro and 43 white athletes on freshman and varsity athletic teams at the State University of Iowa during the 1958-59 school year were used as subjects, together with 30 white nonathletes enrolled in the physical education skills course. The subjects underwent a test of simple reaction time, a test of choice reaction time, a test of choice response time, and a test of multiple response time. The findings appeared to warrant the following conclusions: Negro athletes do not react or respond more quickly than white athletes; athletes (Negro or white) react and respond more quickly than do white nonathletes; the relationship between length of arm span and response time is negligible.

167. Horton, Doris Ann. *An Analysis of Selected Factors Influencing the Choice of Leisure-Time Activities of Senior Citizens in Conway, Arkansas.* M.A. in Physical Education. 1959. 110 p. (B. van der Smissen)

Two hundred senior citizens were interviewed as to the nature of their leisure-time activities. These activities were analyzed in terms of extent of participation, age at which activities were started, the person who stimulated interest, with whom activities were done, reasons for participation, and the relationship between participation and eleven factors, such as sex, education, economic status, length of time retired.

168. **Ikeda, Namiko.** *Relationship of Selected Measures of Wrist Flexibility, Kinesthesis and Agility to Badminton Playing Ability.* M.A. in Physical Education. 1960. (L. Magnusson)

During the last two weeks of an eight-week badminton unit, a series of tests including wrist flexibility, shuttle race, and various measures of kinesthesis, such as arm forward, wrist extension, wrist flexion, target finger spread, supination-pronation and grip pressure, were administered to 72 women students. These test scores were compared to the results on the Volley and Clear badminton tests. There was no significant relationship between wrist flexibility, kinesthesis, or agility and badminton playing ability.

169. **James, Byron D.** *The Effect of Weight Reduction on the Physical Condition of High School Wrestlers.* M.A. in Physical Education. 1959. 20 p. (A. J. Wendler and D. H. McCuskey)

Twenty high school freshmen and varsity wrestlers were divided equally into an experimental group, whose members were required to lose weight each week in order to be eligible, and a control group, whose members were not required to lose weight. Throughout the wrestling season, the Carlson Fatigue-curve Test was administered each week to both groups on the initial day of practice and immediately following the final practice. Also, immediately following each match the systolic and diastolic blood pressures and the pulse rates were taken. The loss-of-weight procedures practiced by the experimental group did not affect their physical condition as measured by the tests.

170. **Jennett, Clair W.** *An Investigation of Tests of Agility.* Ph.D. in Physical Education. 1959. 90 p. (F. D. Sills and H. P. Bechtold)

One hundred male students who volunteered were divided into two groups of 50 each, athletes and nonathletes. The athletes consisted of 10 each basketball players, gymnasts, baseball players, football linemen and football backs. Twenty-five tests were administered to each subject. The findings indicated that performances on agility tests were accounted for, in part, by reaction time, speed of movement, strength, balance, change of position, change of direction, and body size and form. A significant difference was found between several mean factor scores for the athlete and nonathlete groups but no significant difference was found between the mean factor scores for the various groups of athletes.

171. **Johnson, Fred Laverne.** *Relationship of Speed of Executing Exercises to Development of Strength.* M.A. in Physical Education. 1959. 24 p. (F. D. Sills)

Twenty-five male graduate students, 20 to 34 years of age were divided into five groups—a control group and four experimental groups that performed two-arm curls four times a week for six weeks. Each of the four groups performed at a specific rate different from the rates at which the other groups performed. The differences between the initial and final means for strength and speed tests were tested with the t test. None of the differences were significant at the .05 level.

172. **Kammeyer, Shirley J.** *The Development of an Aptitude Inventory and Rating Scale for Community Recreation Leaders.* Ph.D. in Physical Education. 1959. (B. van der Smissen)

A graphic rating scale, constructed to evaluate the quality of leadership, was used as the basis for determining successful and unsuccessful leaders. The aptitude inventory of 200 items was constructed from statements based on qualities of leadership directed toward recreation situations. The inventory was administered to 1,331 leaders, including both sexes and part-and full-time leaders, in 98 public recreation departments. Results indicated that the inventory included sufficient items that discriminated between successful and unsuccessful leaders in all categories, except full-time men; that a job applicant screening device could be devised from such items.

173. **Keenan, Betty Ann.** *The Effect of the Menstrual Cycle on Selected Measures of Balance, Kinesthesis, Strength and Steadiness.* M.A. in Physical Education. 1958. 47 p. (L. Magnusson)

Seventy-five volunteers were administered tests of static and dynamic balance, steadiness, maximum grip strength, strength endurance, and tests of kinesthesis including vertical positioning of the index finger and weight shifting. Each subject was administered a preliminary test, a test during the first 24 hours of menstrual flow, and a test 12 days following the cessation of the flow. Performance on steadiness, weight shift, strength endurance index, and dynamic balance was significantly better during the interval than on the first day of the menstrual flow.

174. LAMBERT, CHARLOTTE. *A Film for Teaching Selected Sport Skills to Elementary School Children.* Ph.D. in Physical Education. 1959. 138 p. (L. Porter)

A sound film and teachers guide was developed for use by teachers of elementary school physical education. The film demonstrates the teaching of sport skills through a progressive sequence of modified team games. Basketball was chosen to demonstrate this method of teaching. To help determine the content of the film, a questionnaire was sent to a selected sample of experienced teachers. An evaluation of the work print by 63 graduate students and staff members of the Women's Physical Education Department indicated the usefulness of the film as a teaching aid for the pre-service and in-service education of elementary school physical education teachers. The film was produced by the Motion Picture Production Bureau.

175. LEWIS, BARBARA IRENE. *The Relationship of Selected Factors to the Vertical Jump.* M.A. in Physical Education. 1959. 41 p. (M. Fox)

The following factors were studied for their relationship to the vertical jump: calf and ankle girths; toe-heel, malleolus-calcaneal and ball-heel foot lengths; height; weight; plantar and dorsal flexion flexibility; ankle strength; and movement time. The vertical jump was executed both with and without the help of the arms. Height, weight and plantar flexion of the ankle were not related significantly. While not highly correlated, movement time (both from the crouch and the erect position) and ankle dorsal flexibility were related at the one percent level of significance. At the five percent level, calf and ankle girths, and ankle strength were correlated with the vertical jump. The reliability of the foot measurements was not high enough to draw any conclusions. A new, easy method of measuring the vertical jump was developed.

176. LIETUVIETIS, KAIJA. *The Effect of Isotonic and Isometric Leg Exercises on Selected Swimming Kicks.* M.A. in Physical Education. 1958. 55 p. (M. Fox)

The subjects were tested on the front and back flutter kicks and the scissors kick using a modification of the Fox Swimming Power Test. On the basis of the sum of T scores, three equated groups were formed. The subjects were also tested for hip joint flexor and extensor and knee joint extensor strength. All subjects were enrolled in lifesaving or intermediate swimming classes. Sixteen subjects in one group did isometric exercises consisting of six-second maximum muscle contractions against the experimenter's resistance. Thirteen subjects did progressive high resistance leg exercises while 18 subjects were used as controls and took no additional exercise. All subjects exercised twice weekly for four and one half weeks. At the end of the experimental period the isometric group showed statistically significant strength gains but the *t* test was not significant. None of the groups showed significant gains in the composite swimming power test scores. There was little correlation between strength gains and swimming kick gains in the two experimental groups.

177. LUNDEGREN, HERBERTA. *Personality Traits of Successful and Unsuccessful Women Camp Counselors from Girls Agency and Private Camps.* Ph.D. in Physical Education. 1960. (B. van der Smissen)

Eight hundred fourteen counselors from 88 camps throughout the United States took the Edward's Personal Preference Schedule and the Who Am I? Test. A background questionnaire including such items as age, camper experience, leadership positions outside of camp, education, profession, was also completed by the counselors. Analysis of variance showed a significant F for Change and Aggression on the Edward's Personal

Preference Schedule. On the background questionnaire, Chi Square showed a significant difference between successful and unsuccessful counselors on age and education. The *t* test of significance between percentages revealed that significantly more private successful counselors had a camp counseling course than did private unsuccessful counselors, and that the agency successful counselors had served in positions of responsibility significantly more than agency unsuccessful counselors.

178. MAGEE, IDA MAE. *Study of the Factors Involved in the Recreation Choices of Selected Secondary School Teachers in Clearwater, Florida.* M.A. in Physical Education. 1958. 59 p. (B. van der Smissen)

Thirty teachers kept a record of recreation activities for three separate weeks: amount of time spent in the activity; source of suggested activity; where the activity was learned; who shared the activity; and how often the activity was participated in. Nature of the activities was also analyzed in terms of factors such as age, sex, present position, marital status, educational background, and residence.

179. MCTARSNEY, PATRICIA ANN. *The Relationship Between Standing Posture, Balance and Fatigue.* M.A. in Physical Education. 1960. 83 p. (M. Fox)

Antero-posterior and lateral postural deviations of high school girls were rated by five experienced judges on the basis of silhouettes. Scales were constructed to assist in rating. Fatigue was evaluated by a questionnaire constructed to attempt to measure both current and chronic fatigue states. Static and dynamic balance were measured by the Balance on Stick and Sideward Leap Tests. On the basis of the judges' ratings of the silhouettes, four groups were differentiated. No relationship was found between balance and fatigue. The normal antero-posterior posture group showed a greater fatigue rating than the deviate antero-posterior group. The normal antero-posterior, deviate lateral posture group showed greater fatigue than the deviate antero-posterior, normal lateral posture group.

180. MERRIMAN, JOHN BURTON. *The Relationship of Personality Traits to Motor Ability.* Ph.D. in Physical Education. 1959. 137 p. (L. E. Alley and L. D. Goodstein)

Eight hundred and eight high school boys in grades 9, 10, 11, and 12, were given the Phillips JCR Test and the California Psychological Inventory in an attempt to determine the relationship between motor ability and personality traits. The data were analyzed to determine: the significance of the mean difference on the CPI scores for the subjects in the upper and lower 25 percent in motor ability; the significance of the mean differences on the CPI of athletes and nonathletes; the significance of the mean differences on the CPI of participants in team sports, individual sports, and team-individual sports; and the relationship between the JCR scores and the CPI scores. Insofar as personality measures may be taken to indicate levels of adjustment, persons who are high in motor ability tend to be better adjusted than persons who are low in motor ability.

181. MORAVEC, MARJORIE ANN. *An Instructional Film on Beginning Tumbling for Girls.* M.A. in Physical Education. 1958. 46 p. (J. Homewood)

A 16 mm black and white sound film of beginning tumbling progressions for girls was developed as an aid for instruction at the junior and senior high school level. The content was based on a survey of the select group of physical education instructors with experience in teaching stunts and tumbling. The stunts included were the forward roll, backward roll, cartwheel, headstand, handstand, and variations.

182. NORDMAN, GERALD R. *A Comparison of the Effectiveness of the Shoulder Block and the Body Block in Football.* M.A. in Physical Education. 1959. 24 p. (L. E. Alley and L. Raffensperger)

Data were collected from a visual analysis of slow-motion movies of 26 football games (11 high-school and 15 university games) played during the 1949, 1950, 1951, 1957, 1958, and 1959 seasons. By means of Chi Square, the hypothesis that the shoulder block and the body block are equally effective in downfield blocking was tested. In each of the 26 games, the Chi Square value was significant beyond the 5 percent level and the shoulder block was more effective.

183. Phillips, Madge. *Biographies of Selected Women Leaders in Physical Education in the United States.* Ph.D. in Physical Education. 1960. 436 p. (M. G. Scott)

The women selected were Dr. Margaret Bell, Dr. Elizabeth Halsey, Miss Margaret D'Houbler, Miss Mabel Lee, Dr. Gertrude Moulton, Dr. I. Anna Norris, Miss Blanche Trilling, and Miss Agnes Wayman. The study presents the background work, professional contributions, honors, and retirement activities. Data were obtained through primary source material and interviews with the subjects and others. The biographies were presented independently without comparisons.

184. Reeder, Glen P. *The Effects of Five Methods of Exercise on the Strength, Endurance, and Action Potentials of the Vastus Lateralis, Rectus Femoris and Vastus Medialis Muscles.* Ph.D. in Physical Education. 1959. 88 p. (F. D. Sills)

The subjects were 50 male students in the physical education skills program at the State University of Iowa. On the basis of strength measurements for the quadriceps femoris, five groups (10 subjects in each) were selected. Each group followed a specific method of exercise (Manual Resistance, Thorndike, DeLorme, Sills, and Klein) for an eight-week period. Initial and final measurements of the strength of the quadriceps femoris, initial and final measurements of the endurance, and four records of action potentials of all three muscles were obtained for all subjects. Each of the five groups showed a mean gain in strength. Four groups (Manual Resistance, Thorndike, DeLorme, and Sills) showed mean gains in endurance. For all five methods of exercise and for all three muscles, except the vasti lateralis, the highest gains in mean microvoltage were recorded in the second quarter of the movement. The gains in mean microvoltage recorded for the three muscles for each of the methods of exercise reflect the extent to which each muscle participated in the development of the quadriceps during the exercise period.

185. Rollo, Ethel Todd. *A Comparison of Two Methods of Teaching Selected Golf Strokes.* M.A. in Physical Education. 1959. 64 p. (M. Fox)

The purpose was to compare two methods of teaching beginning golf skills to college women. One group was taught by emphasizing kinesthetic perception and the other group was taught by the traditional method. To assist kinesthetic perception, a blindfold was used. The groups were equated on a battery of kinesthetic tests at the start of the experiment. At the end of the golf unit, tests were given on the driver, the five iron, the eight iron, and the putter. The two percent level of confidence was set for significance. At this level there was no advantage of either method over the other.

186. St. Clair, Janet. *The Education Curriculum Philosophy of a Select Group of School Camps.* M.A. in Physical Education. 1958. 73 p. (B. van der Smissen)

Analysis of programs of 92 schools having four- to seven-day resident school camp programs for third through eighth grades during regular school time was made in terms of their education curriculum philosophy (activity, core, subject matter), as revealed through direct statements of camp leaders and descriptive paragraphs of the program. Related information also included the source of philosophy and how the program reflected the philosophy.

187. Salem, LeRoy J. *Tests for the Prediction of Rifle Marksmanship.* M.A. in Physical Education. 1959. 27 p. (A. J. Wendler)

Twenty-five male freshmen in the Reserve Officer's Training Corps were scored on six tests (arm steadiness, rifle steadiness, grip strength, back strength, hand-eye coordination, depth perception) to measure factors considered by the rifle team coaches to be important in determining rifle shooting skill. After the testing, three weeks were devoted to instructions concerning the care of the rifle, safety and range procedures, steps in shooting a rifle, and positions used in shooting. This was followed by ten weeks devoted to shooting from each of the three shooting positions. The data indicated that grip strength was the best single measure for predicting rifle shooting ability and the combined score of rifle steadiness and grip strength was the best measure of rifle shooting ability.

188. **Schroeder, Georgia.** *The Relationship of Social Acceptance, Motor Performance and Intelligence to Children's Activity Choices.* M.A. in Physical Education. 1959. 105 p. (L. Magnusson)

An activity choice scale on which the students indicated the activity they liked best, those that were acceptable and those they disliked was developed and administered to 185 third-, fourth- and fifth-grade boys and girls in one school. In addition, intelligence scores from the elementary form of the new California Short Form Test of Mental Maturity or the Otis Self Administering test were available. The Ohio Social Acceptance Scale for intermediate grades plus tests of motor performance including running, throwing, jumping, ball handling, agility, and static balance were administered. The activity choice scales were analyzed to compare the difference in choices between grade level for boys and for girls, between boys and girls in each game, and between high and low group on intelligence, motor performance, and social acceptance for sex and grade.

189. **Smith, Larry J.** *Health Knowledge of Prospective Teachers.* M.A. in Physical Education. 1959. 54 p. (L. E. Alley)

Two hundred and nine prospective teachers enrolled in teaching methods courses completed the Dearborn Health Knowledge Test, a questionnaire concerning the number of college credit hours in health education or hygiene courses and in courses related to health education or hygiene. In terms of health knowledge, prospective teachers with health education or hygiene and related courses scored highest. Those with related courses were next. Then came those with health education or hygiene courses, and last those without any such courses.

190. **Spurgeon, John H.** *Body Size and Form of American-Dutch Schoolboys Residing in Michigan.* Ph.D. in Physical Education. 1959. 39 p. (N. D. Young and H. V. Meredith)

The body form and size of 77 seven-year-old, 73 eleven-year-old, and 96 fifteen-year-old North American schoolboys of Dutch ancestry were studied. The findings were compared with a similar group obtained in 1931 and with those on North American schoolboys of Northwest European ancestry studied in 1950. The following measurements were obtained: stature, stem length, lower limb length, thorax girth, abdomen girth, leg girth, and body weight. In general, the American-Dutch boys studied in 1957-58 were heavier and taller than those studied in 1931 and had stockier body stems and a greater predominance of upper trunk to lower trunk than the American boys of Northwest European ancestry that were studied in 1950.

191. **Trescott, Frederick W.** *An Analysis of Benefit Plans of State High-School Athletics Associations and Commercial-Insurance Companies.* M.A. in Physical Education. 1959. 30 p. (G. T. Bresnahan and L. E. Alley)

The insurance plans sponsored by five state high school athletic associations and those sponsored by five commercial insurance companies were analyzed as to premiums, types of coverage, and benefits. Twenty-three state high school athletic associations provide coverage through their own state high school athletics associations and 20 recommend that coverage be provided by commercial insurance companies. The mean premium for the state association policies was $5.04, and the range was $2.50 to $11.00. The mean premium for the commercial company policies was $7.17, and the range was $3.00 to $11.00. The medical payments, restrictions, limitations, and eligibility requirements for accident coverage under both plans were basically the same.

192. **Unmacht, James H.** *A Study of the Effectiveness of Weight Training in Conditioning Athletes for Shot Putting.* M.A. in Physical Education. 1959. 17 p. (A. J. Wendler)

Forty-five members of freshman physical education classes at Jefferson Junior High, Dubuque, Iowa, were matched on the basis of height and weight and divided into weight training, shot putting, and control groups. Eight-, 10-, and 12-pound shots were used in testing shot-putting ability. Each subject had a higher final than initial score. The individual gains varied from 11 inches in the 8-pound shot-put (control group) to 10 feet 6 inches in the 12-pound shot-put (weight training group). From the results it appeared that in conditioning junior high school boys for the shot-put, extensive practice in shot putting or weight training was less effective than limited practice in shot putting and participation in normal physical education activities.

193. Walker, Margaret C. *A Guide for Counselor-in-Training Programs in Girls' Private Camps.* M.A. in Physical Education. 1958. 110 p. (B. van der Smissen)

A guide for a two-year CIT program was developed from practices recommended by directors of the Ontario Camping Association, from the literature, and from experience. Analysis of present programs in Ontario was also made.

194. Wang, Beulah. *Comparison of Selected Tests of Fitness of Elementary School Children.* M.A. in Physical Education. 1958. 46 p. (M. G. Scott)

The purpose was to compare selected related tests of fitness for elementary children, the ease and objectivity of administration, discriminatory power and preferences of the children. There were 58 children in first grade, 48 in third grade, and 52 in fifth grade. Results indicated that one-minute sit-ups were superior to two-minute sit-ups. The endurance run and squat-side step were not satisfactory tests for this age. The dash and obstacle race were highly correlated. Interest in the tests appears to be inversely related to grade level and experience in fitness testing.

195. Young, Vera Price. *Reminiscence and Its Effect on Learning Selected Badminton Skills.* M.A. in Physical Education. 1958. 59 p. (M. Fox)

The degree of original learning of two badminton skills and the length of nonpractice intervals were studied as factors affecting the occurrence of reminiscence of badminton skill in college women. Two groups equated on the wall volley were used. Group one received instruction for nine weeks; group two, for six weeks. Reminiscence did not affect the learning of the short serve by either group in either nonpractice period. In the wall volley, group one made significant gains after 6 weeks of nonpractice; group two after 18 weeks of nonpractice. As there were no significant differences between means of the wall volley of the two groups at the end of the second nonpractice period, there seems to be no advantage to the longer instructional unit. Learning curves for group one showed positive acceleration through the first nonpractice period, followed by negative acceleration during the second nonpractice period. The curve for group two showed positive acceleration through both nonpractice periods.

University of Maryland, College Park, Md. (B. H. Massey, G. Lawther and W. Stickney)

196. Barrett, Mildred E. *A Study of the Effects of a Knowledge of Mechanical Principles on Learning to Perform Specific Swimming Strokes.* M.A. in Physical Education. 1959. 105 p. (D. R. Mohr)

An experimental study was conducted involving two groups of freshman and sophomore college women, classified as low intermediate swimmers. Mechanical principles governing the performance of the front crawl, back crawl, side and elementary back strokes were explained to the experimental group. After eight weeks of instruction for both groups, the experimental group showed a greater improvement in all strokes than did the control group.

197. Blakey, Donald A. *A Comparison of the Attitudes Held by 7th, 8th, and 9th Grade Boys as They Relate to Four Established Motivation Theories.* M.A. in Physical Education. 1959. 48 p. (W. R. Johnson)

The attitudes of 143 junior high school boys toward athletic activities were measured by means of a "key word or phrase" technique. A comparison was made between the attitudes of the three different grade levels, as indicated by answers given in a sentence completion test, and an attempt was made to relate these attitudes to theories of motivation advanced by Freud, Hull, Hebb, and Maslow.

198. Calvin, Sidney. *An Analysis of the Effects of Progressive Heavy Resistive Exercise on the Motor Coordination of A Group of High School Boys—Ages Fourteen to Eighteen.* Ed.D. in Physical Education. 1959. 121 p. (B. H. Massey)

Two groups, each consisting of 20 high school boys, ages 14 to 18, were used as subjects. The experimental group trained with weights for four months to determine the effects of increased muscular strength and hypertrophy upon speed of movement, accuracy, and dexterity—three components of motor coordination. The experimental group showed a greater improvement in the measures of motor coordination than did the control group.

199. Fahrner, Carl J. *A Comparison of Physical Fitness with the Out-of-School Physical Activity, Academic Achievement and Intelligence Quotient of the High School Student.* M.A. in Physical Education. 1959. 53 p. (B. H. Husman)

The results of the AAHPER Physical Fitness Test for 45 tenth-grade boys were compared with the boys records of out of school physical activity, their grades in academic subjects, and their I.Q.'s as measured by the California Test of Mental Maturity. Little or no relationship was found between physical fitness and any of the other three measures.

200. Hunton, John H. *Implications of Biblical Statements Concerning the Use and Care of the Body in Christian Living.* M.A. in Physical Education. 1959. 103 p. (D. F. Deach)

A verse by verse study of the Holy Bible was made to determine what emphasis it places on care and use of the body. Many passages showed concern for the welfare of the physical body and the strengthening of the body for purposeful living.

201. Hutchinson, Bruce. *The Effect of Systematic Weight Training Upon Muscular Efficiency as Indicated by One Hundred Yards Swimming Performance.* M.A. in Physical Education. 1959. 41 p. (B. H. Massey)

Two equated groups of seven swimmers each were used as subjects. All were members of the varsity team at the University of Maryland. The experimental group included weight training as a part of their conditioning procedure, while the control group did not. Both groups improved their speed in swimming, and there was no significant difference between them.

202. Kingsmore, John M. *Relationship Between Physical Capacity Scores of College Male Freshmen and Aggressive and Sexual Tendencies as Measured by Certain Projective Tests.* M.A. in Physical Education. 1959. 62 p. (W. R. Johnson)

Two groups, each consisting of 37 male college freshmen, were chosen on the basis of their scores in the physical capacity test which is administered to all freshmen in the required physical education program at the University of Maryland. One group had scored high and the other low on this test. Both groups were shown six pictures from the Thematic Apperception Test and then given a sentence completion test to evaluate their aggressive and sexual tendencies. Subjects with low physical capacity scores tended to show greater "total aggressiveness" and "intensity of aggression," as measured by the Thematic Apperception Test, than did those who scored high on the physical capacity test. Subjects with higher physical capacity tended to possess greater "total sexuality," as measured by both the Thematic Apperception Test and the sentence completion test.

203. Kolbenschlag, Francis B. *An Annotated Bibliography of Sources of Selected Recreational Games, Published and/or Copyrighted in the United States from January 1950 through December 1956.* M.A. in Recreation. 1959. 98 p. (E. E. Harvey)

An annotated bibliography of recreational game sources was compiled, including only materials containing low organization activities undertaken for amusement or diversion, as distinguished from the more highly organized competitive activities. Commercially manufactured games were also excluded.

204. Metz, Kenneth F. *The Validity of Brachial Sphygmograms Recorded with the "Infraton" Electrical Pulse Oscillograph for Reflecting the Cardiovascular Fitness of Young Adult Males.* M.A. in Physical Education. 1959. 95 p. (B. H. Massey)

The validity of brachial sphygmograms, recorded with the "Infraton" Electrical Pulse Oscillograph, for distinguishing between conditioned and non-conditioned individuals was examined. It was found that the resting pulse wave amplitude indicated by the oscillograph, as well as the Harvard Step Test, resting pulse rate, and post-exercise pulse rate, distinguished between conditioned and non-conditioned subjects at the .01 level of confidence. The post-exercise pulse wave amplitude indicated by the oscillograph did not significantly distinguish the conditioned subjects from the non-conditioned subjects.

205. Potler, Seymour A. *A Study of the Activities of the Physical Education Teachers in the Elementary Schools of Maryland.* M.A. in Physical Education. 1959. 142 p. (J. H. Humphrey)

A check list of 330 activities was distributed to teachers of physical education in the elementary schools of Maryland to determine activities taught during the school year 1958-59. It was thought that the check list might also serve as a guide to teachers, an evaluative device for administrators, and as a reference for colleges and universities in their formulation of curriculums for preparation of elementary school physical education teachers.

206. Skinner, Leroy C. *An Exploratory Study of the Effects of Impervious Clothing on Physiological Conditioning as Indicated by Selected Measures.* M.A. in Physical Education. 1959. 110 p. (M. H. Eyler)

The influence of impervious clothing on physiological conditioning was studied, using as subjects 18 freshman lacrosse players and 9 physical education students who were enrolled in a recreational activity. There was no significant difference between the group which wore impervious clothing and the group which wore light clothing during a conditioning program. Also, the group that conditioned with the impervious clothing showed no significant weight loss.

University of Michigan, Ann Arbor, Michigan (E. French)

207. Reynolds, Nancy T. *The Effect of Wrist Strength and Wrist Strengthening Exercises on Tennis Playing Ability.* M.A. 42 p. (K. Luttgens)

208. Workman, Donna Jo. *Comparison of Basic Motor Skill Achievement After Two Types of Instruction.* M.A. 49 p. (K. Luttgens)

University of Minnesota, Minneapolis 14, Minnesota (Eugene E. Stish)

209. Erdman, Robert E. *The Relationship of the Success in Making Free Throws in Game Competition with the Time It Was Attempted in Practice.* M.A. in Physical Education. 1959. 31 p. (R. J. Donnelly)

210. Nelson, Newell J., Jr. *The Relationship of Age to Outstanding Performance in Major League Baseball.* M.A. in Physical Education. 1959. 46 p. (R. J. Donnelly)

New York University, New York 3, N. Y. (R. A. Weiss)

211. Bell, Lacey Dell. *A Study of the Policies Governing Interscholastic Athletic Programs for Girls in American Public Secondary Schools.* Ed.D. 1959. (L. A. Larson)

Purposes of American public secondary education and of interscholastic athletic programs were studied and their relationship established. Present policies governing interscholastic athletic programs for girls were compiled and evaluated. The behavioral goals of general education in high school served as the evaluative criteria for policy evaluation. Statements of interscholastic athletic policy were viewed against the selected criteria.

Principles to guide the formulation of interscholastic athletic program policy in accord with the behavioral goals of general education in high school were established by philosophy and survey methods. In many states, current interscholastic athletic policy for secondary school girls limits program variety, thus failing to meet students' needs and interests. There seems to be a trend toward more favorable attitudes on interscholastic athletics for secondary school girls.

212. **Dougherty, M. Frances.** *A Study of the Influence of a Creative Arts Laboratory on Selected Personality Characteristics of College Students.* Ph.D. 1959. (R. A. Weiss)

The personality characteristics of 82 subjects were determined before and after half participated in a 20-week creative arts laboratory course entitled, "Creative Expression in the Humanities." Fifteen variables from the Edwards Personal Preference Schedule and the Discrepancy Score from the Index of Adjustment and Values were used. Forty-one subjects, who did not receive the experimental treatment, were equated with the experimental group on age, sex, scholastic aptitude, and personality. Based on an analysis on covariance, it was concluded that participation in this program of creative expression was ineffective in changing the discrepancy between self-concept and the concept of ideal self. The program resulted in significant changes toward adjustment for achievement, autonomy, and abasement, but changes in other characteristics based on manifest needs were unaffected.

213. **Hess, Ford Allen.** *American Objectives of Physical Education from 1900 to 1957 Assessed in Light of Certain Historical Events.* Ed.D. 1959. (R. A. Weiss)

This study assessed the objectives of American physical education on the basis of their relationship to certain events in American history. The method was historical and documentary. Objectives of physical education and historical events for the 57-year period were determined from a survey of primary sources. The 57-year period was divided into five chronological periods. Events were validated as described by American historians. The objectives were evaluated in terms of the impact of the significant events in American history in shaping them. Educational and social objectives were shaped primarily by educational philosophy. Health and physical objectives were shaped primarily by the significant events in American history.

214. **Keeney, Clifford E.** *The Relationship in White Rats Between Changes in Work Capacity Due to Training and the Eosinophil Response to Muscular Exercise.* Ph.D. 1959. (R. A. Weiss)

The eosinophil response to exercise of different durations in trained and untrained rats was studied to determine whether there was a relationship between the magnitude of the eosinophil response and the subsequent level of adaptation acquired through training. The circulating eosinophil level of each of 24 rats was determined before and after a swim to exhaustion. In like manner, the eosinophil response to swimming half as long was measured. The rats were divided into control and experimental groups of 12 animals each. The experimental group was trained in swimming for six weeks, after which both the control and experimental groups were again tested for the eosinophil response to exhaustive and half-exhaustive swimming. In addition, the response to swimming durations for exhaustive swimming were measured. There was no significant regression of gain in work capacity on the pretraining eosinophil responses. The eosinophil response was directly related to the duration of swimming. In the experimental group, training increased the magnitude of the eosinophil response to swimming times of constant duration. The eosinophil responses of the control group were the same for comparable swimming times before and after the six-week interval.

215. **Kehr, Geneva B.** *An Analysis of Sportsmanship Responses of Groups of Boys Classified as Participants and Non-Participants in Organized Baseball.* Ed.D. 1959. (R. A. Weiss)

The purpose was to investigate the effect of participation in a highly organized competitive baseball program on the sportsmanship scores of groups of boys classified as partici-

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pants and nonparticipants. Six experimental and control groups were established: Group I, participants in Little League Baseball; Group II, boys interested in Little League Baseball but who failed in try-outs; Group III, boys who have never tried out or participated in a highly organized program in sports. These groups were divided into two subgroups, each with 20 eleven-year-olds and 20 twelve-year-olds. Sportsmanship responses were determined by administering the McAfee Preference Record before league play began and again following the season. There were no statistically significant differences in the scores achieved by the participants and nonparticipants, the participants and interest group, and the interest group and nonparticipants. The scores seemed unaffected by several seasons of experience. No statistically significant change occurred in the sportsmanship rating of the boys in any group.

216. LAMM, JESSE M. *The Development of a Manual on the Administration of Recreation Programs for Mentally Defective Children.* Ed.D. 1959. (E. Ball)

The purpose was to develop a manual on administration of recreation programs for the mentally retarded in state institutions within the United States. To determine the present status of recreation, a questionnaire was sent to 97 institutions. To establish the recreation needs of the retarded, a survey of the literature was used. To determine internal administrative factors which influence recreation, a questionnaire was developed. To establish principles of recreation for work with the retarded, principles were checked by a jury of experts. A manual on recreation for the retarded was produced for use by professional and non-professional recreators.

217. ROGERS, MARION E. *An Evaluation of Selected Physical Education Activities for College Women (A Comparative Analysis of Physical Education Activities to Determine Their Educational Potentials).* Ph.D. 1959. (L. A. Larson)

Criteria were developed to determine the educational potentials of selected physical education activities in the college program for women. The methods of research included analysis of the literature, the use of a jury to rate the potential of activities, and a statistical analysis to demonstrate the consistency of the ratings. Physical education activities have measurable educational value. These values have been scientifically determined and applied to 55 selected activities in the physical education program for college women. As a result of this analysis, the merits of other activities can be assessed by analogy.

218. RYLANDER, CURTIS ROY. *The Construction and Validation of Measurement Procedures for the College Program of Physical Education for Men.* Ph.D. 1959. (L. A. Larson)

The purpose was to construct and validate rating scales for the required instructional program of physical education for men, based on degrees of descriptiveness which were defined in relation to the rating situation. To effect the desired measurement procedures, the objectives of the college program of physical education for men were determined; activities to be included in this program were selected; and rating scales were applied to the observable action traits established for each of the components of the objectives. The objectives were determined through a documentary analysis using logic, analysis by definition, and assuming identical meanings from similar phrasing. The program of activities was determined through a study of the logical relationship of activities to the objectives and a study of the activities generally recommended to be included in the college required program of physical education for men. Sixty-four rating scales were developed for the measurement of the objectives of the college program of physical education for men. Only those objectives whose action traits were observable in the rating situation were included in the scales. Each rating scale was descriptive and graphic, with five intervals.

219. SPENCER, HELEN A. *A Study of the Contributions of Physical Education Activities to Democratic Education for Secondary School Girls.* Ph.D. 1959. (L. A. Larson)

The purpose was to investigate the activities taught to secondary girls and to determine the opportunities in those activities which help prepare the individual for democratic living. The activities were rated against criteria which represented the values of democratic education. Twenty-one values were established and validated from an investigation of the literature on democratic education. The method used to evaluate activities against the established criteria followed the pattern developed by Thurstone and Chave for measuring attitudes. Information concerning the elements of the selected activities was placed on cards which were arranged in five piles of gradually decreasing value until all cards in each pile had equal value in meeting an individual criterion. The results indicated that physical education contributed most to democratic education on the secondary level through "extra-curricular activities." Of the 20 activities rated, team sports rated highest.

220. STEBBINS, WILLIAM A. *State Legislation, Rules, and Regulations Pertaining to School Health Services.* Ed.D. 1959. (H. F. Kilander)

This study surveyed the legislation, rules, and regulations currently in force in the various states that pertain to school health services. Also, leading school health personnel were surveyed for recommended health services. Sixty-two procedures were recommended for the health service program. The jury to which these proposals were submitted for evaluation were in more than 75 percent agreement with 59 items and more than 60 percent agreement with the other three. The jury indicated also that greater emphasis needs to be placed on state legislation, rules, and regulations in the field of school health services.

221. TAGGART, GLADYS M. *A Study of the Relationships Between the Goals of Physical Education and Higher Education.* Ph.D. 1959. (L. A. Larson)

The purpose was to show the relationships of the goals of physical education to the goals of higher education with implications for their application. The philosophies and goals of higher education and the goals of physical education as proposed and outlined by leaders in the field were surveyed. The interrelationship of many of these goals was demonstrated. The related goals were validated operationally. Implications were derived for the advancement of these goals through a study of the situation at the University of Wichita.

222. TESORI, ANTHONY P. *An Analysis of the Problems of the Male Student Teacher in Physical Education with Implications for Program Planning.* Ed.D. 1959. (L. A. Larson)

The problem was to identify and analyze student teacher problems and propose solutions, and to determine what Cortland State Teachers College can do to implement these solutions. Practice teaching problems were compiled by surveying student teachers, sponsor teachers, and college supervisors. To determine the standard or practice most responsible for each problem, a jury analyzed a list of standards and practices employed at Cortland. The Division of Health and Physical Education and the Legal Division of the State Education Department, periodical literature, certification requirements, training requirements, and education law were also consulted. The student teacher standards at Cortland appeared adequate in bridging the gap between theories of professional training and practices of a typical teaching situation. Eleven recommendations were offered for improving the student teaching program for physical education men at Cortland.

North Carolina College at Durham, Durham, North Carolina (R. E. Townes)

223. CARTER, JAMES C. *An Intramural Program for Selected Secondary Schools of Alamance County Based Upon Interests and Needs of Adolescents.* M.S. in Physical Education. 1958. (R. E. Townes)

The relationships between extent of participation in activities and estimation of skill, enjoyment of activities, and desired instruction in activities were .85, .65, and .45 respectively. Dancing, basketball, and softball were enjoyed in rank order; however, basketball, baseball, softball, and dancing were the activities in which these subjects desired more instruction.

224. **Hatcher, Edward Q.** *A Study to Determine the Relationship Between Physical Fitness and Academic Achievement of Ninth-Grade Boys.* M.S. in Physical Education. 1959. (R. E. Townes)

The sample consisted of 90 ninth-grade boys. A moderate positive relationship was found between these two variables. Highest mean scores were recorded for the item measuring strength and endurance of the extensor muscles of the arms and shoulder girdles, and the item measuring paragraph-meaning.

225. **Jowers, Johnnie.** *The History of Athletics for Men at Shaw University.* M.S. in Physical Education. 1958. (R. E. Townes)

The study was divided into eras or presidential administrations and dealt with the following factors in each era: personnel equipment, facilities, program content, financing, team records, championship teams, and outstanding performers. Basketball and football were played over a 59- and 40-year period, respectively. Conference championship teams in football, baseball, and tennis singles and doubles represented the University.

226. **Lawrence, Benson.** *A Comparative Study of the Cardio-vascular Condition and Body-Build of Athletes and Non-Athletes.* M.S. in Physical Education. 1958. (R. E. Townes)

Fifteen athletes and 15 nonathletes were administered the Schneider Index and the Rees-Eysench Index. The athletes, as a group were more homogeneous in body build, and superior in cardiovascular condition than the nonathletes. The differences were not significant at the 5 percent level.

227. **Parker, Frank T.** *The Effect of Instruction and General Practice on Throwing for Accuracy.* M.S. in Physical Education. 1958. (R. E. Townes)

The sample consisted of 50 third- and fourth-grade boys and girls. There was a significant difference in the gain of the subjects undergoing 15 thirty-minute periods over the general-practice group. This difference was significant at the 5 percent level of confidence.

228. **Pettiford, Thomas H.** *A Study of Interscholastic Athletic Programs for Boys in Selected Secondary Schools in Northeastern North Carolina.* M.S. in Physical Education. 1959. (R. E. Townes)

The sample consisted of 18 selected secondary schools in northeastern North Carolina. It was found that basketball was played by 17 of the 18 schools, and the median number of interscholastic activities conducted by these schools was two. All of the schools in the study required a physical examination previous to participation.

229. **Roberts, Alice R.** *A Comparison of the Effectiveness of Three Types of Program Content on the Development of Motor Ability of Ninth-Grade Girls.* M.S. in Physical Education. 1959. (R. E. Townes)

The sample consisted of 60 ninth-grade girls. The subjects were divided into three groups of 20 and given 45 forty-minute periods of instruction in a physical education program classified as formal, informal, and formal-informal. The latter content was superior for the development of motor ability of ninth-grade girls.

230. **Stith, Martha.** *A Study to Determine the Effectiveness of Formal, Informal, and Formal-Informal Activities on the Development of Motor Ability of Ninth-Grade Girls.* M.S. in Physical Education. 1959. (R. E. Townes)

The sample consisted of 75 ninth-grade girls. The period of experimentation was 15 weeks. The Newton Motor Ability Test was administered at the beginning and at the close of the period of 45 forty-minute periods of instruction. It was found that the formal-informal type of content was most effective in developing the motor ability of ninth-grade girls.

231. WAY, LEROY. *A Study to Determine the Relationship Between Physical Fitness and Social Adjustment of Ninth Grade Boys.* M.S. in Physical Education. 1958. (R. E. Townes)

A rather low relationship was found between physical fitness and social adjustment of 50 ninth-grade boys. The subjects, as a group, scored highest on the items measuring strength and endurance of the flexor muscles of the arms and shoulder girdles, and lowest on the item measuring explosive power of the leg muscles. The subjects, as a group, were better adjusted in traits dealing with alienation, purpose, and control than in traits dealing with happiness, sympathy, and impulse-judgment. The subjects were on the border-line of adjustment.

Ohio State University, Columbus 10, Ohio (D. K. Mathews)

232. BERAN, ROBERT L. *Speed of Base Running at Selected Distances From Second Base.* M.A. in Physical Education. 1959. (D. K. Mathews)

233. BEYRER, MARY K. *The Significance of Current Trends in School and College Health Programs.* Ph.D. in Health Education. 1959. (E. M. Sliepcevich)

234. BROWDER, JOHN T. *A Study to Compare Four Methods of Rounding First Base in Baseball.* M.A. in Physical Education. 1959. (D. K. Mathews)

235. BURKHOLDER, ROBERT PAUL. *Study of Two Methods for Increasing Jumping Ability for Basketball Players.* M.A. in Physical Education. 1959. (L. A. Hess)

236. CARROLL, CHARLES C. *An Analysis of the Accident Records of the Columbus, Ohio Public Schools for the 1956-57 Academic Year.* M.A. in Physical Education. 1958. (E. M. Sliepcevich)

237. CAUFFMAN, JOY GARRISON. *The Construction of a Health Science Guide for Columbus Public Schools.* Ph.D. in Physical Education. 1959. (W. P. Cushman)

238. CORKERY, JOHN JOSEPH. *A Comparison of R.P.I. Freshmen and Senior Sports Habits and Attitudes.* M.A. in Physical Education. 1959. (B. L. Bennett)

239. DREES, DORIS ANN. *Major Problems Which Occur in Administering Girls Interscholastic Sports in the Schools Belonging to the Ohio High School Athletic Association.* M.A. in Physical Education. 1959. (M. Yost)

240. ROBINSON, ROBERT ANDREW. *A Survey and Analysis of the Training and Conditioning of Football, Basketball, and Track Squad Members in the Secondary Schools of Ohio.* M.A. in Physical Education. 1959. (L. A. Hess)

241. SHANNON, ROBERT LEE. *The Life of Walter J. Livingston and His Professional Contributions.* B.A. in Physical Education. 1959. (B. L. Bennett)

242. SHULTS, FREDERICK DAVIS. *The Life of Fred Eugene Leonard, M.D.; His Contributions and Influence on the Profession of Physical Education.* M.S. in Physical Education. 1959. (B. L. Bennett)

243. STEELE, PAULINE FAE. *An Historical Study of the Role of the Dental Hygienist in the School Dental Health Program.* M.A. in Health Education. 1959. (W. P. Cushman)

244. TUCKER, LAWRENCE R. *An Appraisal of the Elementary School Physical Education Program Utilizing Specialists in Arlington County, Virginia.* M.A. in Physical Education. 1959. 178 p. (W. P. Ashbrook)

245. WHITE, SHIRLEY KEMERER. *An Analysis of the Performance of a Sample Group of Women Students on the Proficiency Examination in the Required Hygiene Course at the Ohio State University.* M.A. in Health Education. 1959. 95 p. (E. M. Sliepcevich)

Ohio University, Athens, Ohio (J. G. Mason)

246. Aebersold, Robert N. *The Relationship Between the Results of a Sociometric Test and the Athletic Participation of a Selected Sample of University Freshmen.* M.S. in Physical Education. 1959. 84 p. (C. T. Nessley)

Ninety-nine freshman men in a dormitory at Ohio University during 1958-59 checked their athletic participation on a check list and listed the three other freshmen with whom they would like to participate in specific phases of group life. The results indicated a small but positive correlation between social acceptance and athletic participation. There was a significant difference between the mean athletic participation scores of the extreme top and bottom groups in social acceptance and between the mean social acceptance scores of the extreme top and bottom groups in athletic participation. Factors other than athletic participation affected social acceptance.

247. Anderson, Audrey N. *A Study of the Recreational Interests and Needs of the Community of Geneseo, Illinois.* M.S. in Physical Education. 1959. 73 p. (C. LaTourrette)

A survey of the municipal recreational services and facilities, and information obtained from members of the community through check lists and interviews indicated that Geneseo lacked playfields, a golf course, tennis courts, a general recreation building, indoor swimming pool, superintendent of recreation, director of a recreation center, and in-service training for the recreation leaders. The results indicated that 60.5 percent of the adults were interested in a recreation program; there should be recreation for the young people; and children who attended the summer playground enjoyed it.

248. Gillespie, Mary Ellen. *A History of Student Health Services at Ohio University.* M.S. in Physical Education. 1959. 107 p. (C. LaTourrette)

Student health services at Ohio University were initiated in 1906. The first full-time university physician was employed in 1937. The expansion of student health services through the following years has met the needs and demands of increasing student enrollment. The development of health services at Ohio University corresponds with the development of health services in other colleges and universities.

249. Hall, Douglas N. *A Study of Recreational Activities and Problems Encountered in Their Administration to Children Residing in Homes for Dependent Youth.* M.S. in Physical Education. 1959. 81 p. (C. T. Nessley)

Planning leisure-time activities in homes for dependent youth differs from that in public recreation systems because many of the children are emotionally disturbed. Visitation and questionnaire results indicated that recreation leaders in these institutions have been trained in education, recreation, recreational therapy, and social work. The most common combination is education and recreation. Activities which incurred little expense or could be improvised easily were planned. Small groups were formed, with emphasis on the emotional needs of individuals. The use of competitive games and awarding prizes was discouraged. Boys and girls participated together, but preadolescent children were not mixed with adolescent children. The most pronounced problem was the lack of trained personnel.

250. Jensen, Judith L. *The History and Development of Volleyball for Girls and Women.* M.S. in Physical Education. 1959. 116 p. (W. K. Miller)

Pertinent materials were reviewed, especially the *Volleyball Guides* for women published since 1926. The evolution of volleyball rules for girls and women was discussed, and the values of volleyball in physical education and recreation programs were presented. Volleyball developed rapidly under the supervision of the YMCA after its invention by William G. Morgan. Volleyball spread to the playgrounds, parks, armed forces, schools, and industries as more organizations joined in preparing rules. Among these were several organizations devoted to developing the rules for women's volleyball.

251. Shaw, Donald L. *A Suggested Year-Round Program of Recreation for a Community of Four Thousand People.* M.S. in Physical Education. 1959. 76 p. (C. T. Nessley)

The need for public recreation in Barbourville, Kentucky, the recreational interests of the residents, and facilities available were surveyed. Suggestions for instituting a year-round program of recreation for Barbourville were developed from the results.

University of Oregon, Eugene, Oregon (M. Poley)

252. Brothers, Roy J. *Effect of Army Conditioning Exercises of Varying Repetitions upon the Physical Fitness Indices of Seventh and Eighth Grade Boys.* M.S. in Physical Education. 1959. 47 p. (H. H. Clarke)

Improvement in Physical Fitness Index scores of seventh- and eighth-grade boys was determined from exercise with the Army Set I series of calisthenics. Nine experimental conditions, with five subjects in each, were established using three time lengths and three weekly exercise programs. The exercise periods were 5, 10, and 15 minutes in length; the combinations of days were Tuesday-Thursday, Monday-Wednesday-Friday, and all five of these days. Improvement was measured with the Physical Fitness Index. The data were treated by analysis of variance. Significant differences in PFI means were not obtained between any of these conditions or any combination of them (interaction). However, there was a significant mean PFI gain on the part of all subjects at the end of six weeks of calisthenic exercises.

253. Clarke, David H. *Social Status and Mental Health of Boys as Related to Their Maturity, Structural Characteristics and Muscular Strength.* Ph.D. in Physical Education. 1959. 121 p. (P. O. Sigerseth)

A sociometric questionnaire was administered to boys aged 9 through 11 years, and a mental health analysis was given to boys 12 through 14 years of age. Fourteen experimental variables consisting of 1 maturity, 8 structural, and 5 strength tests were also administered. In all, 199 subjects were utilized, selected from the Medford, Oregon, public schools as part of a growth study conducted by the School of Health and Physical Education. The difference between the means of the experimental variables for boys with high and low scores on the sociometric and mental health criteria were tested for significance. In general, boys 9 through 11 years of age chosen most frequently by their peers had greater arm strength and were taller and heavier than those chosen least frequently; somewhat lower significance (above .10 level) was obtained for the mean on 12 cable-tension strength tests, Rogers' Strength Index, and hip width. The analysis of the data for the older boys, however, showed no significant differences in experimental variables when a standard mental health inventory was employed.

254. Degutis, Ernest W. *Relationship Between the Standing Broad Jump and Various Maturity, Structural, and Strength Measures of Twelve Year Old Boys.* M.S. in Physical Education. 1959. 82 p. (H. H. Clarke)

The subjects were 81 twelve-year-old boys in the Medford, Oregon, public schools. The correlations between the standing broad jump, as criterion, and 16 maturity, structural, and strength test variables were determined. The following multiple correlations were obtained: anthropometry—.408 with body weight, leg length, and lung capacity; coordinated strength—.393 with Strength Index, back lift, and leg lift; cable-tension strength—.520 with elbow flexion and hip extension; combined variables—.694 with elbow flexion strength, body weight, hip extension strength, ankle plantar flexion strength, and leg length.

255. Geil, Harry C. *Physical and Motor Performance Differences by Age of Boys Participating in the 1956 University of Oregon Summer Sports Program.* M.S. in Physical Education. 1959. 87 p. (H. H. Clarke)

The subjects were 51 boys, 9 through 12 years of age, who participated in the 1956 summer Boys Sports Class conducted by the University of Oregon. The analysis of the test data was designed to show age differences in various physical and motor tests. The entire group of boys were approximately normal in strength, as indicated by mean Physical Fitness Indices. The motor performance of the boys improved with age on such tests as right grip, left grip, softball distance throw, and elbow flexion strength. No consistent improvement was found with such tests as pull-ups, straddle chins, push-ups, vertical jump, softball accuracy throw, and 50-yard dash. The inconsistencies in this study were probably due to the small number of subjects at each age (9 to 15 boys).

256. **Gillespie, Dorwin Kenneth.** *The Incidence and Prevalence of Rheumatic Fever in Lane County.* Ph.D. in Health Education, University of Oregon. 1959. 107 p. (F. B. Haar)

As a pilot investigation and demonstration, this study was the first step in a "Stop Rheumatic Fever" campaign in Oregon. To determine the extent of rheumatic fever in Lane county, data were obtained from a 2 percent random sample of school children and from medical records. Medically verified sample reports indicated that 0.7 percent was an unbiased estimate of the number of cases in the school population as of June 1, 1956. From a sample count of marginal and definite cases, it was estimated that 1.5 percent of the school population needed further observation for or prophylaxis against attacks of rheumatic fever. As a demonstration of a method for assessing the rheumatic fever problem in a finite population, the study checked statistical inferences against a case finding and registration system. The number of rheumatic fever cases registered was within the .95 fiducial limits expected from a Poisson distribution.

257. **Harrison, James C. E.** *The Relationship Between Selected Physical and Motor Factors and the Skeletal Maturity of Nine-, Twelve-, and Fifteen-Year-Old Boys.* Ph.D. in Physical Education. 1959. 187 p. (H. H. Clarke)

Wrist-hand skeletal age assessments were made on 273 Caucasian boys 9, 12, and 15 years of age, in the Medford, Oregon, public schools. At each age, the subjects were divided into three mutually exclusive maturity groups—retarded, normal, and advanced. The differences between the means of these groups on 10 anthropometric, 12 strength, and 1 explosive power measures were computed and tested for significance by the *t* ratio. The greatest difference was found between the mean body weights of the three maturity groups at all ages. Other test variables which had relatively high significance were hip width, grip strength, sitting height, upper arm girth, and calf girth. In the comparison of the advanced and retarded maturity groups, most of the test items had means which were significant or nearly so. In all comparisons, the more advanced maturity groups had the higher means.

258. **Hayman, Noel R.** *Reduction of the Number of Bone Assessments Necessary for Skeletal Age Determination of Adolescent Boys.* Ph.D. in Physical Education. 1959. 103 p.

X rays were taken of the left wrist and hand of 273 normal Caucasian boys in the Medford, Oregon, public schools. Complete skeletal age assessments of all X rays were made by comparison with the Greulich-Pyle standards. Multiple correlations were computed with the over-all skeletal age as the criterion and various combinations of the 30 individual bone assessments as the experimental variables. The easiest combination of bones to assess were capitate, metacarpal III, middle phalanx III, and proximal phalanx III. The multiple correlation for this combination was .9989.

259. **Hindmarch, Robert G.** *The Relationship Between Various Anthropometric and Physical Performance Tests and Selected Trunk Flexibility Criteria.* M.S. in Physical Education. 1959. 51 p. (H. H. Clarke)

The following tests were administered to 100 Canadian-born white boys: anthropometric—height, weight, height-weight ratio, arm length, sitting height, and leg length; performance—one-minute sit-ups, standing broad jump, and one-minute squat thrusts; trunk flexibility criteria—Leighton Trunk and Hip Extension-Flexion Test, Cureton Trunk Flexion Test, Modified Scott-French Bobbing Test, and Kraus-Weber Flexion Test. The correlations between the anthropometric and performance tests and the flexibility criteria were low; the highest was .36 between the standing broad jump and the Scott-French test. The Kraus-Weber test correlated .997 with the Scott-French test, —.830 with the Cureton test, and .779 with Leighton's test.

260. **Irving, Robert N., Jr.** *Comparison of Maturity, Structural, and Muscular Strength Measures for Five Somatotype Categories of Boys Nine Through Fifteen Years of Age.* Ed.D. in Physical Education. 256 p. (H. H. Clarke)

Thirty-seven boys at each age from 9 through 15 years of age (259 total) were somatotyped and groups into the following five physique categories: endomorphs, mesomorphs, ectomorphs, endo-mesomorphs, and mid-types. The differences between the means of these groups on 2 maturity, 11 structural, and 10 strength measures were computed and tested for significance by the *t* ratio. Sketchily, the following significant results were obtained: greater proportion of endo-mesomorphs were advanced and mid-types were retarded in skeletal age; the endomorphs and endo-mesomorphs had greater body bulk measures; the 10-year old ectomorphs had higher mean standing height and leg length; the mesomorphs had generally higher mean arm strength followed by the ectomorphs and mid-types; very few significant differences were obtained for the gross dynamometric strength measures; the mesomorphs had higher Strength Indices than the ectomorphs and mid-types and had higher Physical Fitness Indices than the other categories, and very few significant differences between means were obtained for the cable-tension strength tests.

261. **Jarman, Boyd O.** *Academic Achievement of Boys Nine, Twelve, and Fifteen Years of Age as Related to Various Strength and Growth Measures.* M.S. in Physical Education. 1959. 63 p. (H. H. Clarke)

A total of 217 boys in the Medford, Oregon, public schools at ages 9, 12, and 15 years served as subjects. At each age, high and low groups were formed based separately on five strength and growth measures; each high and low group was equated on the basis of intelligence, using standard I.Q. tests. Throughout, a consistent tendency was found for the high groups to have higher means both on standard scholastic achievement tests and in grade point averages. The best differentiator of academic achievement at all ages was the Physical Fitness Index (*t* ratios between 2.00 and 3.14); the Strength Index was particularly effective at 9 years of age. To a lesser degree, Rogers' arm strength score, McCloy's Classification Index, and Wetzel's Developmental Level also had significance for this purpose.

262. **Petersen, Kay H.** *Contrast of Maturity, Structural, and Strength Measures Between Non-Participants and Athletic Groups of Boys Ten to Fifteen Years of Age.* Ph.D. in Physical Education. 1959. 204 p. (H. H. Clarke)

Two hundred and two randomly selected boys from Medford, Oregon, upper elementary and junior high schools were classified into two major groups—non-participants and athletes, the later differentiated by ability into substitutes, regulars, and outstanding athletes by school coaches. These subjects were tested utilizing maturity (3), structural (10), strength (7), and motor (1) measures. The mean differences were tested for significance at the .01 and .05 levels of confidence by the *t* ratio. When compared with the other three groups, the outstanding athletes had significantly higher mean scores in skeletal age, scored higher on anthropometric tests, reflected more mesomorphy, proved that strength was the most consistent differentiator of athletic ability, and were markedly superior in the standing broad jump which produced the highest *t* ratios of the entire study. Conversely, no marked difference was evident between the other three groups.

263. **Popp, James C.** *Comparison of Sophomore High School Boys Who Have High and Low Physical Fitness Indices Through Case Study Procedures.* M.S. in Physical Education. 1959. 120 p. (H. H. Clarke)

Case studies were conducted on the 20 highest and 20 lowest sophomore high school boys on the Physical Fitness Index test, from 100 subjects originally tested. Only one subject in the high group failed to graduate from high school, while eight in the low group failed to graduate. Ten percent of the high group and 50 percent of the low group were overweight, according to Weight-Height-Age tables. The low group indicated twice as many faulty health habits as the high group. The high group boys were selected much more frequently by teachers as "boys they would most like to have for sons" (1 to 3 ratio). The subjects in the low group were also judged as more frequently lacking in motivation than were the subjects in the high group.

264. Reiser, Kenneth W. *Load and Cadence for Optimum Work Output in Single-Bout Elbow Extension Ergography under Conditions of Exhaustion Testing.* M.S. in Physical Education. 1959. 31 p. (H. H. Clarke)

Twenty-five different elbow flexion ergographic exercise conditions with five subjects for each were studied to determine the optimum work output of each. The subjects were eighth- and ninth-grade boys between the ages of 13 and 16 years inclusive. The following four conditions of work load and cadence produced the greatest work output: one-half of elbow extension strength at a cadence of 84, seven-sixteenths of elbow extension strength at a cadence of 52, five-eighths of elbow extension strength at a cadence of 52, and one-half of elbow extension strength at a cadence of 60.

Pennsylvania State University, University Park, Pennsylvania (J. D. Lawther)

265. Adam, Marylou M. *Secular Trends in Women's Body Proportions.* M.S. in Physical Education. 1959. 52 p. (P. T. Baker)

266. Berlin, Pearl. *Effects of Varied Teaching Emphases During Early Learning on Acquisition of Selected Motor Skills.* Ph.D. in Physical Education. 1959. 239 p. (J. D. Lawther)

267. Butler, John William. *Percentile Tables for Youth Physical Fitness Test in the Western Half of Pennsylvania.* M.Ed. in Physical Education. 1959. 114 p. (E. A. Gross)

268. Hart, Thomas G. Backgrounds and Present Characteristics of Male College Fresh*men with Low Motor Ability.* M.Ed. in Physical Education. 1959. (D. B. Swegan)

269. Kincaid, Donald G. *The Specificity of Muscular Endurance Following Different Rates of Training.* M.S. in Physical Education. 1959. 57 p. (D. B. Swegan)

270. Marino, Frank Paul. *The Relationship of Foot Extension Strength and Jumping Exercises to Vertical Jumping Performance.* M.S. in Physical Education. 1959. 54 p. (J. D. Lawther)

271. McIntyre, Thomas D. *Socio-Economic Backgrounds of White Male Athletes From Four Selected Sports at The Pennsylvania State University.* M.Ed. in Physical Education. 1959. 76 p. (D. B. Swegan)

272. Murray, John A. *The Effect of Muscular Pre-Set on Performance in Certain Selected Activities.* M.S. in Physical Education. 1959. 26 p. (E. A. Gross)

273. Nute, Rhoda Wadleigh. *An Integration Study of an Outdoor Education Program with a Sixth Grade Curriculum.* M.Ed. in Recreation Education. 1959. (F. M. Coombs)

274. O'Brien, Donald E. *The Relationship Between Reaction Time and the Type and Complexity of the Succeeding Task.* M.S. in Physical Education. 1959. 93 p. (J. D. Lawther)

275. Richards, Dorothy Marie. *A Study of Social Integration in High School Physical Education Classes.* M.Ed. in Physical Education. 1959. 45 p. (J. D. Lawther)

276. Rose, Dorothy Lou. *The Effect of the Obliquity of the Shaft of the Femur in Women Upon Speed of Running and Vertical Jumping Ability.* M.S. in Physical Education. 1959. 62 p. (P. T. Baker)

277. Scannell, Robert J. *Selected Factors Concerned with the Maintenance of Endurance.* M.S. in Physical Education. 1959. 114 p. (J. D. Lawther)

278. Slaymaker, Thomas E. *The Effect of Liquid Consumption During A Brief Rest Period on a Second Bout of Exhaustive Exercise.* M.S. in Physical Education. 1959. 38 p. (J. D. Lawther)

279. Wagner, Richard Eugene. *The Effect of Certain Physical Education Activities on the Motor Ability of Male College Freshmen.* M.S. in Physical Education. 1959. 61 p. (D. B. Swegan)

280. Weiland, Walter E. *The Effect of Preparatory Focus of Attention and the Effects of Differences in Succeeding Movement Distance on Speed of Reaction.* M.S. in Physical Education. 1959. 91 p. (E. A. Gross)

San Diego State College, San Diego 15, California (P. Governali)

281. Smith, Robert Lory. *A Physical Fitness Comparative Study.* M.A. in Physical Education. 1959. 67 p. (W. H. Lauritsen)

Differences in the physical fitness of individuals from states with and without required high school physical education were determined. Fifty-five hundred naval recruits were divided into three groups: (1) California, with required physical education; (2) states other than California with required physical education; and (3) states not requiring physical education. The seven item test battery consisted of the 50-yard swim, sit-ups, standing broad jump, 50-yard dash, the 12-inch softball throw for distance, chin-ups, and the 300-yard run. Thirteen of the 14 comparisons yielded mean differences favorable to recruits from California, of which six were significant. Chin-ups by recruits from states not requiring physical education had a mean difference higher than that for California recruits, but the difference was not significant.

South Dakota State College, Brookings, South Dakota (G. E. Robinson)

282. Hofmann, James. *A Comparison of the Effect of Two Programs of Weight Training on Explosive Power.* M.S. 1959. 69 p. (R. B. Frost)

283. Howlin, James. *Comparing Physical Fitness in Selected Areas in Sioux Falls, South Dakota with the National Norms and La Porte Score Card.* M.S. 1959. 86 p. (G. E. Robinson)

284. Kessinger, Kenneth B. *Variations in Physical Fitness Resulting from Participation in the Freshmen Service Program at Augustana College.* M.S. 1959. 64 p. (R. B. Frost)

285. McGauley, Thomas. *A Scoring Device for Analyzing Individual Defensive Football Performance.* M.S. 1959. 35 p. (S. Marshall)

286. Schultz, Alden. *The Effect of a Wrestling Program on Balance in College Physical Education Classes and Amongst Members of a College Wrestling Squad.* M.S. 1959. 47 p. (R. B. Frost)

287. Sluiter, Floyd V. *The Attitudes of Men Students Toward the Required Physical Education Program at South Dakota State College.* M.S. 1959. 62 p. (G. E. Robinson)

288. Walker, Richard. *Changes in Body Fat as Computed from the Skinfold Measurement of College Track and Field Athletes During a Season of Competition and Training.* M.S. 1959. 56 p. (G. E. Robinson)

289. Zahorsky, Arthur. *A History of Intercollegiate Athletics at South Dakota State College.* M.S. 1959. 91 p. (S. Marshall)

University of South Dakota, Vermillion, South Dakota (LaV. Jorgensen)

290. Dent, Bertly E. *An Analysis of Health and Safety Knowledge and Selected Health and Safety Practices of the Boys and Girls of the Mobridge Senior High School.* M.Ed. in Physical Education. 1959. 103 p. (LaV. Jorgensen)

The health and safety practices of the 130 boys and 130 girls (from 274 students) were surveyed with a 200-item questionnaire as a basis for instruction. The evidence showed a tendency in both sexes for questionable health behavior practices to increase with age. Comparatively, the girls were much more concerned with conforming to current fads and fashions, were better informed on nutrition, observed better grooming habits, and tended to date and go steady. Some other apparent differences in the responses of the boys and girls were revealed in questions that accentuated the differences in male and female characteristics and attitudes. The boys and girls of all the high school grades participated in a number of practices that were considered as unwise by health authorities.

University of Southern California, Los Angeles 7, California (L. C. Smith)

291. Arnett, Glenn. *Analysis and Evaluation of Health Expectancies of First Grade Children.* Ed.D. 1959. (E. C. Davis)

292. Baird, Judy. *Energy Costs of Women During Walking.* M.S. in Ed. 1959. 46 p. (L. S. Smith)

293. Bennett, Mary. *Comparison Between Two Methods Utilized for Muscular Strength Development.* M.A. 1959. 115 p. (L. C. Smith)

294. Benton, Carl. *Critical Requirements for Effective Teaching in Methods Classes for Professional Students in Physical Education.* Ed.D. 1959. (E. Metheny)

295. de Vries, Herbert. *Effects of Various Warm-Up Procedures on 100-yard Times of Competitive Swimmers.* Independent Research. 1959. (A. Lockhart)

296. Geddes, David. *The Effects of Rest and Exercise on Performance of Simple Mental Tasks.* Ph.D. 1959. 105 p. (E. Metheny)

297. Logan, Gene A. *A Comparison of Four Methods of Developing Strength of The Quadriceps Muscle: a Preliminary Study.* Independent Research. 1959. (A. Lockhart)

298. Miller, Donna Mae. *The Relationship Between The Ability to Visualize Spatial Relationships and Athletic Performance of University Women Students.* Independent Research. 1959. 79 p. (A. Lockhart)

299. Miller, Henry. *Selection Procedures for Physical Education Personnel in State Teachers Colleges.* Ed.D. 1959. 77 p. (E. C. Davis)

300. Robichaux, Waldean. *Relationship Between Sports Ability and Ability to Learn a New Motor Skill.* Independent Research. 1959. (A. Lockhart)

301. Robichaux, Waldean. *Relationship Between Demonstrated Skill in Performing Sports Activities and Learning New Gross Motor Skills.* Ph.D. 1959. 203 p. (E. C. Davis)

302. Rose, Jack. *An Experimental Investigation of the Effects of Passive Warm-Up Procedures Upon Competitive Running Ability.* Independent Research. 1959. 46 p. (A. Lockhart)

Springfield College, Springfield, Massachusetts (L. M. Ewing)

303. Alex, J. C. *A Study of the Effects of Conditioning Upon Recognition of Stimuli in the Peripheral Field of Vision.* M.S. 1958. 42 p. (E. W. Seymour)

304. Alteveer, Robert J. G. *A Natographic Study of Various Swimming Strokes.* M.S. 1958. 89 p. (P. V. Karpovich)

305. **Baillie, William D.**, and N. W. Osur. *A Film Analysis of the Defense of the Football Opponents of Springfield College in 1951.* M.S. 1959. 137 p. (R. E. Sparks)

306. **Boswell, David M.** *A Study of the Scoring Merits of the Sweep Shot, Slap Shot, and the Snap Shot as Used in Ice Hockey.* M. S. 1958. 42 p. (C. T. Shay)

307. **Bradstreet, Neal A.** *A Study of the Value of a Specialized Felt Board and Figurine Players for the Instruction of Football.* M.S. 1958. 60 p. (R. E. Markarian)

308. **Campbell, Donald W.** *A Study to Determine the Effect of Astringents Under Adhesive Tape on Skin Irritation and Bacterial Growth.* M.S. 1959 71 p. (E. W. Seymour)

309. **Castagner, Arnold D.** *A Survey of Physical Education in the Public High Schools of Vermont.* M.S. 1958. 108 p. (R. C. Havel)

310. **D'Annolfo, Frank J.** *A Pictorial Analysis of the Head First Slide and Hook Slide in Baseball.* M.S. 1959. 46 p. (W. Doss)

311. **Edgar, John B., Jr.** and E. P. White. *A Study to Determine the Leading Psychological Characteristics of a Good Competitor in the Game of Football.* M.S. 1958. 76 p. (E. T. Dunn)

312. **Evans, Melvin I.** *A Proposed Program of Physical Education for Boys and Girls of the Choppee High School, Georgetown, South Carolina.* M.S. 1959. 101 p. (E. H. Champlin)

313. **Haroney, Vincent N.** *A Survey of the Aquatic Requirements and Facilities of the Public High Schools in the State of Michigan.* M.S. 1958. 83 p. (C. E. Silvia)

314. **Harrell, L. D.** *A Survey of the Maneuvers that Resulted in Escapes and Reversals as Used by Springfield College Wrestling Team and Their Opponents During the 1956-57 Season.* M.S. 1958. 69 p. (R. E. Sparks)

315. **Hill, Arthur W.** *A Survey of Fundamentalist Christian Camps.* M.S. 1958. 139 p. (C. T. Shay)

316. **Hudson, Donald E.** *A Study to Determine if Injuries Received in Football Handicap the Athlete in Later Life.* M.S. 1959. 69 p. (S. W. Shaw)

317. **Jordan, Ralph.** *A Survey of the Intramural Athletic Program for Boys in the Accredited Negro High Schools of North Carolina.* M.P.E. 1958. 70 p. (C. T. Shay)

318. **Kidess, Attallah A.** *A Study of the Work and Contributions of Dr. James Huff McCurdy to Physical Education.* D.P.E. 1958. 293 p. (C. T. Shay)

319. **Leftwich, Horatio F., Jr.** *An Annotated and Indexed Bibliography of Intramural Publications from 1900 to 1957.* M.S. 1958. 172 p. (R. E. Sparks)

320. **Leggett, Leslie R.** *Physiological Measures of Selected Weight Lifting Activities.* D.P.E. 1958. 145 p. (P. V. Karpovich)

321. **Libby, Robert D.** *A Study of the PFI, the SI and the Speed in an Interscholastic Football Program.* M.S. 1959. 116 p. (C. T. Shay)

322. **Lipscomb, James M. II.** *A Survey of the Recreational Activities of a Select Group of Junior High School Students in the City of Westfield, Massachusetts.* M.S. 1959. 54 p. (H. C. Harlow, Jr.)

323. **Locke, Margaret C., Jr.** *A Biographical Study of Agnes Rebecca Waymen: Her Life and Contributions to the Fields of Health, Physical Education, and Recreation.* D.P.E. 1959. 153 p. (Ruth Evans)

324. **LoMaglio, A. Peter.** *An Investigation and Evaluation of Personality Characteristics of Physical Education Majors in Colleges.* D.P.E. 1958. 260 p. (C. T. Shay)

325. Martin, John C. *The History of Football in the Central Intercollegiate Athletic Association.* M.S. 1959. 108 p. (A. A. Kidess)

326. Mitchell, F. N. *A Survey of Physical Education Personnel for Women in Negro Colleges and Universities.* M.S. 1958. 62 p. (C. T. Shay)

327. Mitchell, George. *A Survey of Varsity Football Injuries at the University of Connecticut from 1952 through 1955.* M.S. 1959. 83 p. (E. W. Pennock)

328. Mount, James T. *The Effect of Various Dosages of Stetazine on the Hand Grip Strength of Individual Schizophrenic Patients.* M.S. 1959. 81 p. (C. W. Morgan)

329. Nye, Robert E. *A Mechanical Analysis of the Techniques of the Chip Shot.* M.S. 1958. 31 p. (C. W. Morgan)

330. Pash, Allan. *The Role of Intelligence in Learning Volleyball.* M.S. 1959. 45 p. (C. T. Shay)

331. Ricci, Benjamin. *The Relationship of Physical Fitness as Measured by the Roger's Physical Fitness Index to Academic Success of College Freshman Male Students.* D.P.E. 1959. 144 p. (R. C. Havel)

332. Shaner, Armand L. *Materials for a Filmstrip and Manual on Individual Techniques of Defensive Man-to-Man Play for the Beginning Basketball Coach and Player.* M.S. 1959. 102 p. (E. S. Steitz)

333. Van Vleet, Donald. *A Study To Determine Salary Policies for the Teaching of Athletics in the High Schools of New York State and Massachusetts.* M.S. 1959. 112 p. (E. H. Champlin)

334. Wilkinson, Irving B. *A Study To Determine the Relative Academic Success of College Freshmen Participating in Intercollegiate Athletics at Springfield College, Springfield, Mass.* M.S. 1959. 37 p. (C. T. Shay)

Stanford University, Stanford, California (M. L. Knapp)

335. Arnsdorff, Dorothy. *Perceptions of Critical Behaviors for Women Physical Education Teachers at the Secondary School Level.* Ed.D. 1959.

Descriptions of effective and ineffective teaching behavior were obtained from 116 women physical education teachers in 35 high schools and 163 eleventh-grade girls in five of these schools. Critical incidences were reduced to five major and 22 subareas. Significant differences were found by Chi Square between teachers and students for planning and organization, presentation of material, and guiding learning experiences, but not for measurement and evaluation or teacher qualities. Behaviors considered critical by both groups were providing effective guidance and control, and showing friendliness, fairness, and consideration. Behaviors considered critical by teachers, but not students, were effective use of instructional time and methods of presentation. And those considered critical by students, but not teachers, were showing patience, poise, self-control, and a sense of humor, and using effective motivation. The last indicated a desire by students for mature, understanding, and interesting teachers.

336. Dexter, Genevie. *Physical Education Programs in California Junior, Senior, Junior-Senior High Schools in 1956-57.* Ed.D. 1959. (M. L. Knapp)

Separate questionnaires were sent to principals, heads of programs for boys, and for girls in all public coeducational high schools with 91 percent response. The acceptability of Education Code objectives, contribution to each objective of various aspects of physical education, offerings by areas, instruction in areas, and problem conditions were surveyed. About 75 percent of each group considered the stated objectives acceptable but reported that facilities, equipment, and supplies created moderate to great problems. More than 50 percent of each group reported that aquatics and team sports contributed fully to six of the nine objectives, individual and dual sports to five, gymnastics to four dance to two, and recreational and social games to one. Most schools had broad and varied programs, and 57 percent of the principals but only 38 percent of program supervisors considered teaching load no problem.

Syracuse University, Syracuse 10, New York (J. H. Shaw)

337. Cobane, Edith. *A Comparison of Two Methods of Teaching Selected Motor Skills.* Ed.D. 1959. 108 p. (L. Verhulst)

The study compared two methods of teaching tennis skills to 64 freshman and sophomore college women who were beginning players. The control group was taught by the traditional method involving demonstration, explanation, practice, and correction. The method used with the experimental group added emphasis on understanding selected principles of human movement which underlie the production of force and accuracy in a tennis stroke. Skill tests of the forehand drive, the backhand drive, and the service were given before instruction, after five lessons, and at the end of the semester. Acquisition of knowledge and understanding was tested by means of a written examination at the end of the semester. Analysis of covariance showed no statistically significant differences in the acquisition of skills. Analysis of variance showed that the experimental group was superior in the acquisition of both knowledge and understanding. Results indicated that the experimental method was as effective as the traditional method in teaching skills, despite loss of practice time, and was superior in teaching knowledge and understanding.

Teachers College, Columbia University, New York, New York (J. L. Rathbone)

338. Aitken, Margaret H. *A Study of Physical Education Facilities for College Women with Implications for Western Washington College of Education.* Ed.D. 1958. (H. A. Scott)

339. Alway, Leonore K. *Proposed Criteria and Procedures for Use in the Appraisal of Off-Campus Schools for Student Teaching.* Ed.D. 1958. (C. L. Brownell)

340. Andrews, Ruth E. *A Study of Physical Education for Girls in the Senior High Schools of Indiana.* Ed.D. 1958. (H. A. Scott)

341. Edwards, Gerald. *A Study of the Variations in Motor Fitness of Adolescent Heroin Addicts During the Period of Restriction at The Riverside Hospital.* Ed.D. 1958. (J. L. Rathbone)

342. Fleischer, Michael M. *A History of the Eastern College Athletic Conference.* Ed.D. 1958.

343. Goldston, Stephen E. *The Selection and Professional Preparation of Public Health Educators for Service in Cross-Cultural Assignments.* Ed.D. 1958. (H. Walker)

344. Gilcoyne, Katharine. *The Professional Preparation of Women for Physical Education in the First Half of the 20th Century.* Ed.D. 1958.

345. Hixson, Chalmer G. *Sports Officiating for Men in Schools and Colleges with Special Implications for Ohio.* Ed.D. 1958. (H. A. Scott)

346. House, Henry C., Jr. *The Development of a Functional Approach to the Teaching of Sports in Pre-Service Education of Physical Education Major Students at the University of North Carolina with Special Reference to Football.* Ed.D. 1958. (H. A. Scott)

347. Irace, Sebastian C. *Case Studies in the Administration of Intercollegiate Athletics for Men with Reference to the Member Institutions of the College of the City of New York.* Ed.D. 1958. (H. A. Scott)

348. Leasure, Clara E. *A Dynamic Program of Community Health Education with Particular Reference to Southeastern Public Health District.* Ed.D. 1958. (H. Walker)

349. Leidy, Rita O. *A Guide For Effective Organization and Conduct of Girls Athletic Associations.* Ed.D. 1958. (C. L. Brownell)

350. McCay, Albert H. *An Examination of the Boys Physical Education Program, Public Junior High Schools, State of Washington; with Suggested Guides for Improvement.* Ed.D. 1958. (C. L. Brownell)

351. Montebello, Robert A. *Situational Case Studies of Selected Colleges and Universities in Which the Required Program of Physical Education Has Been Challenged.* Ed.D. 1958.

352. O'Brien, Lorraine. *In-Service Education for Board of Education Recreation Personnel: Special Reference to New York City.* Ed.D. 1958. (J. L. Hutchinson)

353. Patri, Virginia C. *Womanpower and Physical Education.* Ed.D. 1958.

354. Patterson, Norris A. *A Guide for Long-Range Planning with Special Reference for Physical Education Facilities at William Jewell College.* Ed.D. 1958. (H. A. Scott)

355. Pearson, Carl Eric. *Physical Education for the Elementary Classroom Teacher.* Ed.D. 1958. (H. A. Scott)

356. Peck, Robert R. *An Analysis of Practices in the Administration of Intercollegiate Athletics in Selected Colleges.* Ed.D. 1958.

357. Poindexter, Hally B. W. *Graduate Professional Preparation in Physical Education in Selected Colleges and Universities with Implications for Teachers College, Columbia University.* Ed.D. 1958. (H. A. Scott)

358. Runkle, Raymond J. *The History of Intercollegiate Gymnastics in United States.* Ed.D. 1958. (H. A. Scott)

359. Scott, Charles D. *The Nature of the Sports Page in Relation to Inter-Collegiate Athletics.* Ed.D. 1958. (H. A. Scott)

360. Sells, James L. *Analysis of Functions Performed and Competencies Needed to Administer Programs of Intercollegiate Athletics.* Ed.D. 1958.

361. Steen, Barney. *Guides and Program for Physical Education at Calvin College, Grand Rapids, Mich.* Ed.D. 1958. (H. A. Scott)

362. Tomey, John Alfred. *A History of Competition Rowing in Colleges and Universities in the U.S.A.* Ed.D. 1958.

363. Vaughan, Andrew T. *A Personnel Study of Men Physical Educators in Selected Colleges and Universities.* Ed.D. 1958. (H. A. Scott)

364. Veselak, Kenneth E. *A Study of the Relationships Between Public Schools and Community Health Agencies in Selected Communities.* Ed.D. 1958. (H. Walker)

Temple University, Philadelphia 22, Pa.

365. Augustin, Wilbert Raymond. *The Construction and Standardization of Two Alternate Forms of a Health Knowledge Test for Senior High School Students.* Ed.D. 209 p. (H. K. Jack)

Texas Woman's University, Denton, Texas (E. K. Dillon)

366. Afflerbach, Helen Jean. *The Relationship of Intelligence, Reaction Time Using Large Muscle Groups, and Motor Ability of 125 High School Girls.* M.S. 1959. (E. K. Dillon)

The Otis Self-Administering Test of Mental Ability, Form D, a modification of the Keller Reaction Time Test and the Scott Motor Ability Test, Battery Two, were administered to 125 high school girls at Denton High School during the academic year 1957-1958. Means, standard errors of the means and standard deviations were calculated for the sophomore, the junior, the senior and the total group on tests of intelligence, on each item in the motor ability test and on reaction time. Differences between means and critical ratios were also calculated. Coefficients or correlation were calculated to establish the reliability of reaction time in a backward direction and total Keller test with the fourth target added. Coefficients of correlation were also calculated to determine the relationship of intelligence and reaction time, intelligence and motor ability, and reaction time and motor ability.

367. **Gleckler, Margaret Jacqueline.** *A Study of the Development and Evaluation of a Program of Recreational Therapy for Severely Involved Poliomyelitis Patients.* Ph.D. 1959. (H. A. Richardson)

The development and evaluation of a program of recreational therapy which was integrated with the medical management of 30 severely involved poliomyelitis patients 19 years of age and older at the Southwestern Poliomyelitis Respiratory and Rehabilitation Center and the Wolff Home Poliomyelitis Rehabilitation Unit, Houston, Texas, was undertaken. Data from interviews with patients, from each patient's participation and reactions to the program, and from other records in the Center and Home were reported in 30 case studies. The findings were summarized, and recommendations for the development of recreational therapy programs for severely involved poliomyelitis patients based upon the findings were presented.

368. **Hodges, Gloria.** *Changes in Physical Fitness Status of 143 Freshmen and Sophomore Women Enrolled in Physical Education Classes at Kansas State Teacher's College, Pittsburg, Kansas, Who Took Part in a Planned Program of Conditioning Exercises.* M.S. 1959. (E. K. Dillon)

The Kraus-Weber Test of Minimum Muscular Fitness, the Scott and French Test of Fitness, and the Indiana Physical Fitness Test were administered to 143 freshman and sophomore women at the beginning of the spring semester. Conditioning exercises were given to those students for a period of 24 lessons, and the physical fitness tests were re-administered. The number of students passing or failing each item of the Kraus-Weber Test of Minimum Muscular Fitness were tabulated. Means, standard error of the means, and standard deviations were determined for each test item on the Scott and French Test of Fitness and the Indiana Physical Fitness Test and coefficients of correlation of initial and final scores on each item in the Scott and French Test of Fitness and the Indiana Physical Fitness Test were calculated. Conclusions were drawn concerning the physical fitness tests and the status of the students tested.

369. **Pendergraft, Marian G.** *The Development, Direction, and Production of a Selected Portion of the 1959 Synchronized Swimming Show To Be Presented by the Synchronized Swimming Club of Texas Woman's University.* M.S. 1959. (E. K. Dillon)

The purpose was to develop four synchronized swimming compositions and to design the costumes, plan the lighting, and serve as technical advisor for the production of these compositions. The four compositions were developed; the natatographies written; costumes and lighting planned; and the rehearsals directed. The compositions were presented during the spring tour of the Synchronized Swimming Club, and an evaluation of the production was made.

370. **Richardson, R. Jean.** *A Film Designed for Recruitment of Prospective Students as Majors in Physical Education, Health Education and Recreation at Odessa College, Odessa, Texas.* M.S. 1959. (H. A. Richardson)

A recruitment film was produced presenting vocational opportunities in physical education, health education, and recreation for women and designed to attract superior young women into professional education in physical education, health education, and recreation at Odessa College, Odessa, Texas. Production of the film involved writing the continuity script for the video and audio portions of the film, designing film content and sequences, supervising preparations and filming, editing, and recording the narration on a magnetic sound track. The 16 mm color and sound recruitment film was filed with the Dean of the College of Health, Physical Education and Recreation, Texas Woman's University.

371. ROCHELLE, MARGERY EDITH. *An Evaluation of College and University Professional Courses in Basketball by Coaches of Girls' Interscholastic Basketball Teams in the Public Secondary Schools of Texas.* M.S. 1959. (E. K. Dillon)

An evaluation of professional courses in basketball was made on the basis of questionnaires sent to 124 coaches of girls interscholastic basketball teams in the public secondary schools of Texas who were actively engaged in coaching at the time of the study or who had coached during the past three years. Data collected from these questionnaires were summarized. Conclusions were drawn concerning the value of professional courses in basketball at the college level.

372. SLIFER, MARY JANET. *A Dance Syllabus with Laboratory and Workbook Assignments for Senior High School Girls.* M.S. 1959. (A. S. Duggan)

A syllabus in dance was prepared with laboratory and workbook assignments for the use of girls in senior high school physical education classes. An initial section presented the fundamentals common to the four types of dance selected for inclusion in the study—ballroom, folk, modern, and tap dance.

University of Utah, Salt Lake City, Utah (N. P. Neilson)

373. BOWEN, JOHN MARLO. *A Proposed Recreation Program for Goldendale, Washington.* M.S. 1959. 100 p. (J. L. Squires)

The general problem was to propose a recreation program for Goldendale, Washington. A normative survey showed that many of the citizens of Goldendale were recreation-minded; some had a limited understanding of the concept of a public recreation program; emphasis on recreation was toward the younger citizens; and lack of coordination was a major problem.

374. ERICKSON, HAL A. *A Proposed Plan for Supervision of Health Education and Physical Education in the Public Schools of Utah.* M.S. 1959. 85 p. (A. O. Bronson)

The problem was to propose a plan of supervision designed to improve health education and physical education programs in the public schools of Utah. The method was analytical and descriptive. A formula for the number of supervisors needed was developed and applied. Conclusions were that approximately 25 supervisors are needed in Utah, and that most of the school districts in the state can afford the needed supervision. It was recommended that similar studies be conducted in other states.

375. JOHNSON, LAVON C. *A Fitness Program for Atypical Students.* M.A. 1959. 71 p. (A. O. Bronson)

The problem was to develop a fitness program for atypical students in the junior and senior high schools of Salt Lake City, Utah. Analytical and descriptive methods were used. The author concluded that corrective physical education programs were feasible and highly desirable for the high schools of Salt Lake City and recommended that programs be offered.

376. JONES, LILLIAN F. *A Recreational Therapy Program for the Organically Impaired Aged.* M.S. 1959. 78 p. (A. O. Bronson)

The problem was to construct a recreational therapy program for the organically impaired aged in a state mental hospital that would maintain and develop individual powers. Methods used were normative survey and experimental. The conclusions were that activities of a social-passive nature had the highest degree of interest among geriatric patients and evaluating specialists; activities which require strength, skill, and endurance tend to be avoided by the aged; and literature on the recreational interests of female elderly citizens was almost nonexistent.

377. **Menlove, Marlene M.** *Evaluation of Professional Preparation in Physical Education.* M.S. 1959. 51 p. (A. O. Bronson)

The problem was to evaluate the program of professional preparation that is offered at the University of Utah in the Department of Health, Physical Education, and Recreation. Survey and analytical methods were used. On the basis of six conclusions drawn, it was recommended that some changes be made in the activity and theory classes offered and that follow-up studies along this same line be conducted at intervals.

378. **Oborn, Gordon E.** *Tenure of Scoutmasters.* M.S. 1959. 96 p. (A. O. Bronson)

The purpose was to find the factors which influence the voluntary tenure of scoutmasters in the Church of Jesus Christ of Latter-day Saints Units of the Salt Lake Council, Boy Scouts of America. Normative survey method was used. Five conclusions were drawn, and three recommendations were made.

379. **Prasad, Ram Lakhan.** *An Evaluation of the Yoga System of Physical Education.* Ed.D. 1959. 195 p. (N. P. Neilson)

The general problem was to evaluate the Yoga system of physical education using the Clark W. Hetherington concepts of physical education as criteria. The evaluation was made through use of scientific analysis, seminar discussions, some experiments, and judgments of experts. Ratings by the experts (three judges) indicate that the Yoga asanas selected make a very good contribution to flexibility, balance, and endurance but contribute only slightly to the development of strength. It was recommended that some of the asanas be selected as keep-fit exercises and that they be practiced by people of all ages in terms of individual needs.

380. **Steele, Don Claude.** *The Personality of the Dancer.* M.S. 1959. 55 p. (E. R. Hayes)

The problem was to determine whether there are significant personality characteristics of majors in modern dance, and to correlate these with traits of majors in related fields. The method was normative and analytical. A general conclusion was that personality traits of modern dance majors do follow a pattern and that this pattern can be distinguished from that of ballet and physical education majors or from the normative population.

381. **Woodward, James.** *Progressive Weight Training in Physical Education.* M.S. 1959. 57 p. (A. Simone)

The general problem was to compare the effectiveness of a progressive weight training program and a required physical education program for high school boys in the same institution in the specific areas of strength, endurance, reaction time, and balance. The method of study was experimental. A general conclusion was that progressive weight training when added to a physical education program significantly aided development of high school boys in strength, endurance, reaction time, and balance.

Washington State University, Pullman, Washington (G. Romney)

382. **Brayton, Frederick Charles.** *A Cinematographical Study of the Relative Horizontal Speed of the Outfielder's Throw Before and After It Skips from the Grass.* M.S in Physical Education. 1959. 43 p. (G. E. Galligan)

383. **Brown, Gaydena Marlene.** *The Relationship Between Body Type and Static Posture of Young Adult Women at the State College of Washington As Related with Body Alignment and the Gravital Line at the Base of Support.* M.S. in Physical Education. 1959. 52 p. (H. Smith)

384. Cox, James Bruce. *The Competencies Necessary to Obtain the Position of a High School Physical Education Director in the State of Washington.* M.S. in Physical Education. 1959. 111 p. (G. E. Galligan)

385. Enberg, Mary Lou. *Changes in General Motor Ability of Women Students Enrolled in a Class of Fundamentals of Movement at the State College of Washington.* M.S. in Physical Education. 1959. 77 p. (M. B. Wohlford)

386. Howe, Martha. *The Extent to Which the Professional Preparation of Women Physical Education Teachers in the State of Washington Meets the Northwest Standards in Physical Education.* M.S. in Physical Education. 1959. 59 p. (G. E. Galligan)

387. McCabe, Helen Wersen. *A Study of School Recreation Programs in the Junior And Senior High Schools of the State of Washington.* M.S. in Physical Education. 1959. 117 p. (G. E. Galligan)

388. Ortmayer, Roland Louis. *Intramural Sports Participation at the State College of Washington with Special Reference to Scholastic Achievement.* M.S. in Physical Education. 1959. 79 p. (G. E. Galligan)

389. Pearce, Janice. *The Extent and Adequacy of the Health Knowledge Possessed by Students at the State College of Washington.* M.S. in Physical Education. 1959. 99 p. (H. G. Smith)

390. Riddle, Lloyd Raleigh. *The Extent to Which Self-Contained Classroom Teachers in the State of Washington Were Prepared to Teach Physical Education in Grades 4 - 5 - 6.* M.S. in Physical Education. 1959. 100 p. (G. E. Galligan)

391. Ronning, Hilding Earl. *Wall Tests for Evaluating Tennis Ability.* M.S. in Physical Education. 1959. 53 p. (V. P. Dauer)

392. Thompson, Melvin W. *Relationship of Preseason Physical Testing and Postseason Rank Of Selected High School Football Players.* M.S. in Physical Education. 1959. 40 p. (G. E. Galligan)

393. Turkington, Harold David. *A Comparative Study of an Interval and a Traditional Method of Training for Competitive Swimming.* M.S. in Physical Education. 1959. 35 p. (V. L. Shaw)

394. Wyckoff, Winnefred Lee. *Effect of Constriction on the Endurance of the Left Forearm Flexors.* M.S. in Physical Education. 1959. 37 p. (G. R. Hearn)

University of Washington, Seattle 5, Washington (M. R. Broer)

395. Blowers, Paul Leslie. *The Professional Status of the Head Athletic Coaches of Selected Varsity Sports at Pacific Coast Public Junior Colleges.* M.S. in Physical Education. 1959. 142 p. (R. K. Cutler)

Responses from 207 of 227 head baseball, basketball, football, and track coaches showed that the mean years experience were for teaching 12.9, for coaching 13.2, and for present position 5.6. The median total salary was $7207 (other teachers $6719), and the mean income from outside work was $1112 for 66.8 percent. The other summary statistics in percentage form were Bachelor's degree 100, Master's degree 67.2, undergraduate physical education major 74.4, experience teaching in high school 80.7, physical education 88.4, social studies 21.3, and science 12.3; experience coaching in high school 81.4 and no previous coaching experience before hired for present position 9.7; present teaching in activity classes 85.3, major and academic 40; present coaching duties in one sport only 17.5, head coach in more than one sport 42.7, assistant in other sports 45.2; competitive experience in sport coached 96.3; retirement benefits 92.3, and tenure 83. They compared favorably with their academic colleagues in educational background, teaching experience, salary, and faculty status. Their playing and coaching experience compared favorably with four-year college coaches.

396. **Bredehoft, Theordore Cornell.** *A Survey of Health and Safety Practices Utilized in Selected Interscholastic Wrestling Programs Throughout the United States.* M.S. in Physical Education. 1959. 125 p. (L. W. Stevens)

A survey was made to determine the health and safety practices in interscholastic wrestling programs throughout the United States. Questionnaires were sent to 134 selected high school wrestling coaches, with 86 percent return. The following recommendations were based upon the results of the study: *Physical examinations*—State Athletic Associations require an exam prior to beginning of wrestling season; a minimum of 20 to 30 minutes should be spent in each examination; *Sanitation*—mats and mat-covers should be cleaned daily with an antiseptic solution; *Care and prevention of injuries and infections*—athletes should be required to carry insurance; a physician should be present at all meets, and the temperature in the wrestling area be between 70° and 80°; *Training and conditioning*—daily practice sessions should not exceed two hours and the maximum number of dual meets should be twelve; and *Control of weight reduction*—diets and general work-out alone should be used to reduce weight of a wrestler; coaches support the NCAA and AMA in developing a national weight control plan.

397. **Cameron, Peter John.** *A Survey of the Physical Education Curriculums, Facilities, and Administrative Organizations in the City High Schools in the Province of Saskatchewan, Canada, during the 1958-59 School Term.* M.S. in Physical Education. 1959. 135 p.

The LaPorte Score Card Number II, with minor adaptions for Saskatchewan high schools, was used. The score cards were returned by 25 of the 26 high schools in the province. The results indicated that in the categories of curriculum, facilities, and administrative organization, the Saskatchewan city high schools were below the standards recommended by LaPorte for an adequate physical education program. Appropriate recommendations were made to the high school physical educators and administrators of the province, to the Physical Education Committee of the Saskatchewan Teachers' Federation, and to the Fitness and Recreation Division of the Saskatchewan Department of Education.

398. **Donley, Clifford Edward.** *A Survey of the Physical Education Programs and Facilities in Secondary Schools of the First Judicial Division of Southeastern Alaska.* M.S. in Physical Education. 1959. 103 p.

Schools were visited; observations were made, and evaluation of the programs and facilities were based on the La Porte Score Card Number II. The major areas in which the schools collectively were below the recommended standard were program of activities, modified-individual (corrective) activities, and swimming pools. The results and appropriate recommendations were returned to the school authorities.

399. **Gier, James Dale.** *The Relationship of Physical Ability to Certain Psychological Scores and Ratings among Mentally Retarded Boys.* M.S. in Physical Education. 1959. 96 p.

A stratified random sample of 60 mentally retarded boys with I.Q.'s ranging from 46 to 83 on the Wechsler Intelligence Scales was selected from 275 boys in the Pacific Prevocational School. The Iowa Revision of the Brace Test was administered in physical education classes. Predicted social behavior was determined from scores on the Thematic Apperception Test, the House-Tree-Person Test, and the Rotter Incomplete Sentence blank obtained from the Department of Guidance Services of the Seattle Public Schools. The revised Brace test correlated .332 (.01 level) with full-scale I.Q., 259 with verbal I.Q. and .291 with performance I.Q. (.05 level). The correlation with predicted social behavior was .186 (not significant), indicating very little relationship between physical ability and predicted social behavior among mentally retarded subjects

400. **Hammond, George Arthur.** *The Investigation of Criteria for the Organization and Administration of Foundations Dedicated to the Purpose of Administering Gifts and Bequests for Park and Recreation Purposes.* M.S. in Physical Education. 1959. 145 p. (N. F. Kunde)

401. **Herber, William J.** *A Study of Certain Financial Practices Used in the Interscholastic Athletic Programs of Public Senior High Schools of the State of Washington 1957-58.* M.S. in Physical Education. 1959.

The purpose was to ascertain how high school administrators managed the financial aspects of interscholastic athletics. The topics investigated were preparation, adoption, and execution of the athletic budget, the custody of athletic funds, the auditing of athletic accounts, the income for athletics other than tax moneys, and the expenditures for athletics other than building costs, overhead, and coaches salaries. A questionnaire was sent to the principal of each public senior high school in the state and 175 of 273 (65 percent) returned their questionnaires. The results were summarized, and recommendations were made.

402. **Kennison, James L.** *A Survey of Physical Education in Rural Public Elementary Schools in th Inland Empire Area of Washington for the School Year 1958-1959.* M.S. in Physical Education. 1959. 101 p. (J. A. Torney, Jr.)

A survey was made of the physical education curriculums, facilities, and administrative practices in 81 rural elementary schools of the Inland Empire Area of Washington. The questions were answered by school principals concerning the facilities and administrative practices and by the teachers of physical education concerning the curriculum. The following needs were evident: more extensive and inclusive teacher education program for elementary school teachers certification; exclusion of activities unsuitable for the certain age groups; blacktop outside areas; indoor recreation areas; additional playground equipment; and uniform, established administrative practices.

403. **Lahr, Jacquelyn Adele.** *The Validity of Commonly Used Agility Tests.* M.S. in Physical Education. 1959. 69 p. (M. R. Broer)

The purpose was to determine the validity of a group of commonly used agility tests. The results were based on the scores of 50 students in two Basic Activity classes at the University of Washington. The results showed that the ten tests studied were reliable, the Scott Shuttle Race and the Short Potato Race being the least reliable (.73). Intercorrelations indicated that with the exception of the Forty Yard Maze Run and Scott Shuttle Race, these ten tests were highly related. The total T-score was used as the criterion for agility. The correlations of the ten tests with the criterion varied from .42 to .84. The Scott Obstacle Race and the Illinois Run had the highest correlations with the total T-score (.84 and .81). Multiple correlations showed that combinations of the Burpee test with the Short Potato Race, and the Burpee test with the Scott Shuttle Race resulted in high correlations with the criterion. The Illinois Run and Sidestep had the highest correlation with the total T-score.

404. **Lowenberger, Arnold George.** *The Relationship Bewteen Participation in Intramural Athletics and Scholastic Achievement of Male Students at the University of Saskatchewan During the 1958-1959 University Year.* M.S. in Physical Education. 1959. 51 p.

A comparison was made of the final examination averages of participants and nonparticipants. Participants were matched with 153 nonparticipants according to academic major, score on the university entrance examination, and university class. The results showed that first-year participants received better grades than nonparticipants; second-year participants received poorer grades than nonparticipants; third-year participants received slightly poorer grades than nonparticipants; and fourth-year participants received higher grades than nonparticipants. Collectively, the nonparticipants received slightly higher grades than the participants. Since none of the differences was significant, it was concluded that participation in intramural athletics neither added to nor detracted from the scholastic achievement of university students.

405. McConnell, Janice Lee. *The Effects of a Ten-Minute Period of Body Conditioning Exercises and Apparatus Instruction on Certain Elements of Physical Fitness of High School Girls.* M.S. in Physical Education. 1959. 128 p.

The purpose was to determine the effects of body conditioning exercises in combination with apparatus instruction on the muscular strength, endurance, agility, and flexibility of high school girls. Two freshman and two sophomore classes were used as subjects. At the beginning of the apparatus unit, the physical fitness was measured by the Washington Performance Test, which included through the stick, pull-ups, curl-ups, squat-thrusts, and the Illinois Agility Run. During the six-week instructional unit, one freshman and one sophomore class were given ten minutes of conditioning exercises before the apparatus instruction. The other two classes received only apparatus instruction. Following the instructional unit, the Washington Performance Battery was readministered, and three judges evaluated the apparatus skill of the students. The results indicated that six weeks of apparatus instruction combined with ten minutes of conditioning exercises increased the physical fitness of high school girls without being detrimental to the learning of apparatus skills. Apparatus instruction alone did not increase the physical fitness but maintained it at a relatively high level.

406. Midtlyng, Joanna. *Current Practice in Fundamental Movement Education in Programs of Physical Education for Women in Selected Colleges and Universities of the United States.* M.S. 1959. 274 p. (K. S. Fox)

Current practices in fundamental movement courses were determined by surveying departments of physical education for women with such courses, and opinions were obtained from institutions not offering such a course. With limitations, many considered such courses an important part of the program. These courses emphasized relaxation, body conditioning, and daily life skills in the activity program, and dance skills were added in the professional program. Most physical educators need more background in fundamental movement education and about one-fourth of the institutions had staff in-service projects to study movement. Physical education could be improved by the application of understanding of movement to motor activities.

407. Ward, Robert Darryl. *The Effects of Participation in Selected Physical Education Activities on the General Athletic Ability of Male Students at the University of Washington, 1959.* M.S. in Physical Education. 1959. 64 p.

The purpose was to determine the effects of participation in gymnastics, weight training, handball, and basketball on the general athletic ability of male students. Cozens' test for general athletic ability was administered to the selected groups at the beginning and end of the quarter. The gain of the four groups was compared statistically for each of the five items composing the test and for the composite score. The improvements by the weight training group in the bar snap and by the gymnastics and handball groups in the standing broad jump were significant. Differences in the other events and the composite score were not significant. Although the improvement of the composite score was not significant for any group, statistical comparisons between groups showed that the improvement of the gymnastics group differed significantly from the rest.

408. Webster, Sherman L. *The Status of Interscholastic Wrestling in Selected High Schools in the State of Washington.* M.S. in Physical Education. 1959. 83 p.

Questionnaires covering administration, equipment, and facilities were sent to the 63 schools sponsoring interscholastic wrestling programs, with 55 responding. The results led to recommendations that a special physical examination be required before subdistrict meets and after serious illness or injury, that adequate facilities be provided or hazards in makeshift quarters be reduced, that wrestlers wear knee pads and headgear in practice and competition, that coaches improve their competence by attending wrestling clinics, and that insurance company policy in establishing accident insurance rates be investigated.

University of Wisconsin, Madison, Wisconsin (J. G. Wolf)

409. BARTKOWIAK, DON. *A Cinematographical Analysis of Three Basic Wrestling Moves.* M.S. in Physical Education. 1959. 149 p. (J. Grove Wolf)

Six performers of different experience levels (two college seniors, two college freshmen, two high school seniors) performed three basic wrestling moves (double-leg drop, switch, sit-out). Two motion picture cameras were used to obtain a view from two planes. The film was Tri-X Reversal, indoor, f-28 exposure, 16 mm, run at 24 frames per second. Definite patterns of movement existed among the wrestlers. The more experienced performers adhered to basic principles of movement. There was a great variance among performers. The time to complete a double leg-drop varied from one second to 1.433 seconds; the switch, one second to 1.900 seconds and the sit-out varied from .666 seconds to 1.266 seconds.

410. BIGLEY, GENE and KARST, RALPH. *The Measurable Support Given to the Ankle Joint by Conventional Methods of Ankle Taping.* M.S. in Physical Education. 1959. 75 p. (G. L. Rarick)

The purpose was to compare the effectiveness of four conventional taping methods. Each taping procedure was applied to each subject and measurements of force applied at specific positions were taken as the ankle was moved through plantar, flexion-medial rotation. The measurements were corrected to give effective force throughout the range of movement. Five subjects were used; two measurements were taken on each subject for each taping method, with the order of taping being reversed during the second testing. The ankle taping methods employed were the standard basket-weave (open in front), the standard basket-weave with super-imposed stirrup, the standard basket-weave with super-imposed heel-lock, and the standard basket-weave with the stirrup and heel-lock super-imposed. The results showed that the variations in taping all provided some added support. However, following the ten-minute exercise, the tape structure lost a considerable amount of its original effectiveness. The basket-weave in combination with the stirrup and heel-lock showed a greater strength retention for both the unexercised and exercised condition. The taped ankle was afforded greater protection at the mid-range of normal action than at the extremes.

411. COUNSELL, DUAINE K. *Achievement Scales in Swimming Performance for West Allis Central High School.* 1959. M.S. in Physical Education. 99 p. (J. Grove Wolf)

The sample included 127 boys of the tenth, eleventh, and twelfth grade swimming classes at West Allis Central High School. Records were kept of age, weight, height, I.Q. score and nationality of each subject. The tests administered were buoyancy, floating, 20-yard flutter kick (front, back), 20-yard breast stroke, and 20-yard back stroke. Test-retest reliability coefficients ranged from .90 to .99. The range of performance within each group indicated a need for a reclassification within each group to meet individual needs more adequately.

412. HOFF, DONALD, and CHRISTENSEN, GWYNN M. *A Study of the Duties of the Athletic Director in Wisconsin High School and College Athletic Programs.* M.S. in Physical Education. 1959. 110 p. (R. J. Francis)

Questionnaires were sent to 175 schools and colleges selected at random, in a survey of the duties of athletic directors. The 143 questionnaires returned gave a sampling of 45 percent of all schools with 100 or more enrollment. Approximately 50 percent of the athletic directors were performing duties in line with what authorities agreed were appropriate to that position. However, definite discrepancies were revealed in the following areas—matters of finance, budgeting, public relations and publicity, the handling of transportation, allotment of time, and especially in outlined job specifications where little was done. Coaches reported that the leadership and organization provided by athletic directors were desirable if not essential.

413. **Kerr, Donald P.** *The Effect of Weight Training on the Jumping Ability of High School Athletes and Non-Athletes.* M.S. in Physical Education. 1959. 66 p. (J. Grove Wolf)

Forty-eight subjects, including 24 basketball players and 24 physical education students were divided into three groups on the basis of age, height, and weight by means of the McCloy classification index. The weight training program was conducted over a 12-week period divided into the two 5-week periods with a 2-week recess between. Exercise group one (8-15 repetitions, 2 sets) and exercise group two (5-8 repetitions, 3 sets) performed the heel raise and the deep knee bend. The third group (control) did not participate in any resistance exercises. The experimental groups showed greater gains than the control group which indicated that heavy resistance had an effect upon the jumping ability of high school basketball players and nonathletes. No significant difference in improvement was found between the skilled and unskilled performer in jumping ability.

414. **Yahr, Donald E.** *A Study of Offensive Wrestling Maneuvers Used by High School Champions in the State of Wisconsin.* M.S. in Physical Education. 1959. 31 p. (R. J. Francis)

The study was based on motion pictures of 40 high school championship wrestling bouts and analysis of the offensive maneuvers used by the champions. The categories of offensive maneuvers were pins, near pins, rides, escapes, reversals, and take-downs. The following offensive maneuvers were the most successful and most frequently used during the championship bouts: take-downs (leg dive and pancake), escapes (sit-out and duck under), reversals (switch), pin (half-nelson crotch hold), near pin (half-nelson crotch hold), and ride (waist lock). Although the third round was decisive for 13 bouts, nearly twice as many maneuvers took place in the second round, indicating that wrestlers have the greatest opportunity to win points in the second round. The wrestler that executed a successful take-down in the first round won 76 percent of the bouts in the State Tournament, indicating that much emphasis should be placed on the take-down.

415. **Young, John D.** and **Skemp, Michael G.** *A Comparison of Peripheral Vision Reaction Time of Athletes and Non-Athletes in Relationship to the Colors of Red and Green.* M.S. in Physical Education. 1959. 53 p. (R. J. Francis).

Ten athletes and ten nonathletes volunteered as subjects. Each subject was given a preliminary test on the perimeter to determine the field of vision for red and green. All subjects had at least a 40-degree field of vision on the nasal side and an 80-degree field of vision on the temporal side. Four different light sequences were picked randomly. After five minutes adjustment to laboratory conditions, 78 illuminations were displayed in the perimeter for the right eye, and, after a two-minute rest, 78 were displayed for the left eye. A five-minute rest followed and 52 illuminations were displayed for the left eye and, after a two-minute rest, the same pattern was presented to the right eye. The nonathletes were significantly slower in reacting to red and green light at all positions in the visual field except one. No conclusive evidence was found that the athletes reacted faster to red or green.

Institutions Reporting

Brigham Young University
University of Buffalo
University of California, Berkeley
University of California, Los Angeles
University of Colorado
Eastern Illinois University
George Peabody College for Teachers
George Williams College
Illinois State Normal University
University of Illinois
Indiana University
State University of Iowa
University of Maryland
University of Michigan
University of Minnesota
New York University
North Carolina College at Durham
Ohio State University
Ohio University
University of Oregon
Pennsylvania State University
San Diego State College
South Dakota State College
University of South Dakota
University of Southern California
Springfield College
Stanford University
Syracuse University
Teachers College, Columbia University
Temple University
Texas Woman's University
University of Utah
Washington State University
University of Washington
University of Wisconsin